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CLIMATE OF SALT LAKE CITY UTAH

Wilbur E. Figgins (Retired)
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NOAA Technical Memoranda (NWS WR)

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I. INTRODUCTION

The purpose of this publication is an attempt to bring together under one cover as much data as possible concerning the climate of Salt Lake City. This was a difficult undertaking because of the wide variance of climate in the Salt Lake area. The Wasatch Mountain range, immediately east of the city, and the location of the Great Salt Lake, a short distance to the west, cause a great difference in local microclimates.

The Salt Lake City weather records began over 100 years ago; however, the statistics in this report are based on the airport weather records which began May 1, 1928. The airport location continues to the present to be the National Weather Service' official weather observing location for the Salt Lake City area. This provides us with over 58 years of continuous weather information that was observed from an existing or comparable exposure location. However, it must be remembered that various extremes stated in this paper have, no doubt, been exceeded at other sites in the locality. Any summary such as this must be taken in the context of giving a general view of Salt Lake Valley conditions with the details only being applicable to the airport environs.

II. GEOGRAPHICAL AND CLIMATOLOGICAL SUMMARY

Salt Lake City is located in a northern Utah valley surrounded by mountains on three sides and the Great Salt Lake to the northwest. The city varies in altitude from near 4200 feet to 5000 feet above sea level (ASL).

The Wasatch Mountains to the east have peaks to nearly 12,000 feet ASL. Their orographic effects cause more precipitation in the eastern part of the city than over the western part.

The Oquirrh Mountains to the southwest of the city have several peaks to above 10,000 feet ASL. The Traverse Mountain Range at the south end of the Salt Lake Valley rises to above 6,000 feet ASL. These mountain ranges help to shelter the valley from storms from the southwest in winter, but are instrumental in developing thunderstorms which can drift over the valley in the summer.

Besides the mountain ranges, the most influential natural condition affecting the climate of Salt Lake City is the Great Salt Lake. This large inland body of water, which never freezes over due to its high salt content, can moderate the temperatures of cold winter winds blowing from the northwest and helps drive a lake/valley wind system. The warmer lake water during the winter and spring also contributes to increased precipitation in the valley downwind from the lake. The combination of the Great Salt Lake and the Wasatch Mountains often enhances storm precipitation in the valley.

Salt Lake City normally has a semi-arid continental climate with four well-defined seasons. Summers are characterized by hot, dry weather, but the high temperatures are usually not oppressive since the relative humidity is generally low and the nights usually cool. July is the hottest month with average maximum readings in the nineties.

The average temperature range is about 30 degrees in the summer and 18 degrees during the winter. Summer temperatures above 102 degrees or winter temperatures colder than -10 degrees occur only 1 season out of 4.

Winters are cold, but usually not severe. Mountains to the north and east act as a barrier to frequent invasions of cold continental air. The average annual snow fall is under 60 inches at the airport, but much greater amounts fall on higher bench locations. Heavy fog often develops under temperature inversions in the winter and can persist for several days.

Precipitation, generally light during the summer and early fall, reaches a maximum in the spring when storms from the Pacific Ocean are moving through the area more frequently than in any other season of the year.

Winds are usually light, although occasional high winds have occurred in every month of the year, particularly in March.

The growing season, or freeze-free period, averages over 5 months in length. Yard and garden foliage generally are making good growth by mid April. The last freezing temperature in the spring normally occurs in late April with the first fall freeze normally occurring in mid October.

III. HISTORY OF WEATHER OBSERVATIONS AT SALT LAKE CITY

The first weather observations in the Salt Lake area were taken by Mr. William W. Phelps, who entered the Salt Lake Valley with the Brigham Young company in 1847. Figure 1 is an example of Mr. Phelps' meteorological journal entries made at Winter Quarters near Council Bluffs, Iowa, for December 1847.

After settling in the Salt Lake Valley, Mr. Phelps continued his weather observations and, accompanied with other valuable information, included them in the published form of the "Deseret Almanac". The first edition of the almanac was published in 1851 and contained 16 pages plus a calendar for the year giving the time of sun risings, settings, and moon changes. The almanac for the year 1860 contained 32 pages and included the following statement: "A person without an almanac is somewhat like a ship at sea without a compass; He never knows what to do nor when to do it".

As early as 1851, Mr. Phelps was furnishing the city's newspaper staff with weather and astronomical observations. The following example of Mr. Phelps' comments is from the March 8, 1851 issue: "Again Doctor, I solicit a space in your columns, to say a few words upon 'the weather', which is so wonderfully foretold by the almanac maker, or the printer's devil in many almanacs, for the vexing consolation of farmers, travelers, and some visiting women. It cannot, at this time, be exactly told who first invented this kind of prophecy, but the English sovereignty, and the Yankee nation, have held it in as much repute as the subjects of a potentate to his word:--THE KING CAN DO NO WRONG".

It was also a belief in Mr. Phelps' day, as it is by some meteorologists today, that the changes of the moon have a strong influence on the weather. This is what Mr. Phelps had to say concerning this theory: "As to the influence supposed from changes of the moon over the weather, a few words to common sense minds will suffice. I have witnessed more than six hundred changes of the moon in fifty years, during which time not less than ten thousand changes of weather have happened by night and by day, among which were snow in winter, and thundershowers in winter; and yet, before and after all, when true philosophy which is truth, was consulted, I never found a man of this world, that knew what a day would bring forth, a year, a month, or a week ahead, unless revealed by the spirit of prophecy.

"On January 12, 1857, W.W. Phelps presented to the legislature a resolution creating the office of Superintendent of Meteorological Observations. The resolution was accepted, and Mr. Phelps was appointed to fill the position. As Superintendent, Mr. Phelps furnished monthly weather memoranda and meteoric phenomena to the city's newspaper, the Deseret News. The following entry in the paper typifies his work: "Mr. Editor: Some people have short memories, and I wish to check errors. Speaking of our cold winter thus far -- permit me to say that on January 9, 1848, the thermometer stood at 11 degrees below zero at sunrise, and this year, January 9, 1849, 4 degrees above zero at sunrise and has not been down to zero yet this month. The coldest day of the winter of 1848 was March 3, when the thermometer fell to 15 degrees below zero, with a cold west wind".

W.W. Phelps died March 6, 1872, but his records were continued by his son. Subsequently, a Professor M.E. Jones got these data from the Deseret News and corrected and summarized them into monthly tabulations using daily records.(See Figure 2)

The first official weather service for Salt Lake City, sponsored by the U.S. Government, began on March 19, 1874, under the U.S. Army Signal Service. The weather station was located in a corner room on the third floor of the "Exchange Building" or "Godbe Building" on the southeast corner of East Temple and First South Streets.

On July 1, 1891, the Weather Bureau was established and made a part of the Department of Agriculture. At this time many Army Signal Corps personnel doffed their Army uniforms and became members of the Weather Bureau. The first civilian official in charge of the Weather Bureau Office was formerly an Army official.

Through the years the downtown Salt Lake weather office changed locations several times. In succession, the office was located at the following addresses:

March 19, 1874, to June 29, 1876: Corner room on the third floor of the "Exchange Building" or "Godbe Building" on the southeast corner of East Temple and First South Streets.

June 29, 1876, to July 31, 1891: In two rooms on the fourth floor of the Wasatch Hotel, southeast corner of Main and Second South Streets.

July 31, 1891, to March 15, 1899: Board of Trade Building at 154 West Second South Street, in rooms 50, 51, and 52 on the 5th floor.

March 15, 1899, to July 1, 1909: Southeast corner of Second South and West Temple Streets, on the 6th floor, rooms 601, 628, and 629. On July 1, 1904, the office quarters were expanded to include rooms 630 and 631.

July 1, 1909, to December 1, 1932: Boston Building on the corner of Main Street and Exchange Place occupying office rooms 1103 through 1107 in the east end of the penthouse and the east corner of the garret. Starting on May 1, 1928, an additional office was opened at the new airport west of downtown Salt Lake City.

December 1, 1932, to August 15, 1954: 501 Federal Building located at Main and Fourth South Streets.

August 15, 1954, to present: The city office was closed and its functions moved to the airport office.

The Wright brothers ushered in the flying age and with it the demand for supporting airports around the country. As mentioned above, the Weather Bureau expanded their mode of operation to meet this challenge. On May 1, 1928, the Weather Bureau established a first-order weather station at the Salt Lake Municipal Airport, 3-3/4 miles west-northwest of the downtown Federal Building at latitude 40^0 46' and longitude 111^0 58'. The station was located in a small house in the southeast corner of the airport complex, east of the United Airlines hanger. Elevation at the observing site was 4222 feet ASL.

The airway and pibal observations began on the opening date with the first weather observation being taken at 6:00 a.m. May 1, 1928. The wind anemometer was located 47 feet above the ground. The thermometers were installed in a standard Weather Bureau instrument shelter with the thermometers 5 feet above the ground. The precipitation gages were placed approximately 6 feet west of the shelter with the base on the ground and top or opening 3 feet above the ground. On June 11, 1933, the weather-observing equipment was moved 800 feet north of the original location to the roof of the Airport Administration Building which was a two-story structure. The temperature apparatus was installed in a standard Weather Bureau instrument shelter with the thermometer being located 5 feet above the roof and 33 feet above ground level. The rain gages were installed on the same roof, about 20 to 25 feet immediately north of the instrument shelter. The wind instrument was 18 feet above the second-story roof or 46 feet above ground level.

During the winter of 1943-1944, a third floor was added to the Administration Building. Although the instrument shelter was able to remain in the second-story roof, just south of the new third story, the rain gages were moved to the roof of the third floor on April 1, 1944, making them 41 feet above ground level.

On July 2, 1954, the station was moved to the one-story Federal Aviation Agency - Weather Bureau Office building at 174 North 2300 West Streets or some 325 feet southeast of the previous location. The wind instruments were 33 feet above the ground, temperature instruments 6 feet above the ground, and rain gages 3 feet above the ground.

On July 29, 1960, automatic temperature and wind-measuring equipment were moved to near the major runway 3600 feet northwest of the Government building.

On March 8, 1978, the station was moved to its present location in the new Executive Terminal building at 337 North 2370 West Streets approximately 1/4 mile north of the 1954 location. Wind, temperature, dew point, and visibility measuring equipment are remote sensors located adjacent to the main airport runway.

Precipitation, solar radiation, and standby temperature measuring equipment are located about 300 feet east of the station.

Ceilometer equipment, which automatically observes and records cloud heights, was first installed at the airport on March 5, 1946. The projector was located 1463 feet north of the observing quarters, and the ceilometer scanner was located on the roof of the first floor of the Administration Building about 80 feet north of the observing quarters. On October 31, 1958, a rotating beam ceilometer, with a baseline of 800 feet, was installed 1/4 mile south of the main airport runway, and then on December 12, 1976, relocated to be near the south end of the main airport runway about 4700 feet west-northwest of the Forecast Office.

The present state of the art of both observing and forecasting the weather is constantly being re-evaluated for improvement. New computer-age technology is replacing the older, and often times, cumbersome methods of producing the various weather products issued to public and special user groups. Weather forecasting programs have been developed that are especially tailored for special problem areas. The fire-weather forecasting program is a typical example. Specifically trained meteorologists utilize mobile self-contained weather stations and report directly to forest or range fire fighting crews. They give on-the-spot observations and forecasts of wind direction and speed, temperature, humidity, and other selected parameters required for maximum support to the fire fighting crews. Other special weather support programs include those in fruit-frost cooperative observing and forecasting, air pollution, aviation, and local forecasting. All these are in addition to regular public service duties.

Climatology is an input in many of these programs. Certain combinations of pressure, wind, moisture, modified by topographical combinations yield specific characteristics of "weather". The only problem is that the atmosphere is so vast in its global scale that local combinations of specific weather yielding parameters are very difficult to duplicate. "Man" by his very existence is constantly changing the landscape--laying miles or acres of pavement and cement, building heating and cooling systems, and other modern-day miracle aids--and in the process influencing Mother Nature's natural local temperature and wind circulation patterns.

IV. SELECTED HIGHLIGHTS OF THE SALT LAKE CITY AIRPORT WEATHER RECORDS

The longest period of extremely hot days (consecutive days with maximum temperatures 95 degrees or higher) was 20 days from July 11 through July 30, 1960, and another 20 day period from July 23 through August 11, 1978.

The earlier episode takes the record as the hottest extended period on record. During that 20 day period there were 9 consecutive days (July 14 through July 22) followed by 6 consecutive days (July 24 through July 29) in which the daily maximum temperature was over 100 degrees. The average daily maximum during this 20 day period was 101.3 degrees. The hottest day was on July 26 when the high was 107 degrees which has remained the hottest day on record at the Salt Lake City airport. Minimum temperatures during the same 20 day period ranged from 57 degrees on the 12th to 74 degrees on both the 27th and 28th.

In the later extended hot period (July 23 through August 11, 1978) there were 6 consecutive days with 100 degrees or higher. The average daily maximum was 98.4 degrees and minimum temperatures during the period were mostly in the 60s with the lowest of 58 degrees on the morning of July 23rd, and the warmest of 71 degrees on the morning of July 28th. The warmest maximum during this period was 103

degrees on July 24th, the anniversary day of when the Mormon pioneers entered the Salt Lake Valley. The pioneers arrived during the climatological hottest time of the year in the Salt Lake Valley.

Both of these extended hot periods were finally broken by cold frontal passages and an outbreak of showers or thundershowers. During the 1960 hot spell, the maximum of 98 degrees on July 30th lowered to only 90 degrees on July 31st when a cold front moved across the Salt Lake Valley. Rainfall at the airport on July 31st was .02 inches. At the end of the 1978 hot spell, the maximum of 98 degrees on August 11 lowered to only 85 degrees on August 12. Again, a cold front moved through the Salt Lake Valley this time dumping .72 inches of rain at the airport.

When the all-time high temperature of 107 degrees occurred on July 26, 1960, the surface winds, for the most part, were southerly 5-12 mph through the night and morning hours shifting to northerly 5-9 mph during the afternoon. At 3 p.m. the temperature was 103 degrees with 8/10 of the sky covered by a combination of cumulonimbus and cirrus type clouds. The clouds thinned out during the next couple hours and the record maximum temperature of 107 was reached. The morning minimum on the 26th of July was 63 degrees, which was only one degree warmer than the normal minimum for the date. Increasing cloudiness the following day, July 27th, accounted for a slight drop in the maximum down to 104 degrees. Maximum temperatures continued to decrease the next two days--down to 101 on the 28th, and finally on the 29th, down to an even 100 degrees.

February 9, 1933, was the date of the lowest temperature ever recorded at the Salt Lake airport--30 degrees below zero. The mercury managed to climb to 8 degrees above zero for the afternoon maximum. It was cold again the next day, February 10th, with a minimum of 26 degrees below zero. But on February 11th, the short cold snap was broken when a snow storm moved over the area and the minimum temperature rose to 1 degree above zero. The maximum peak wind speed gust of 94 mph occurred on June 3, 1963, during passage of a very strong cold front that was accompanied by heavy thundershowers. During the early morning of the 3rd, the surface wind was southerly with a brief wind gust to 25 mph at 4 a.m. By 5 a.m., the wind shifted and blew lightly from the north, then by 8 a.m. was blowing from the south again at 10 to 18 mph. Cumulonimbus (thunderhead clouds) developed by 11 a.m. and the surface wind became variable 10 to 18 mph and light showers developed over the area. The cold front struck the airport at 3:05 p.m. accompanied by heavy thundershowers with the surface wind shifting to westerly and increasing to 58 mph with gusts to 94 mph. The peak gust of 94 mph lasted but a brief moment, but wind gusts ranging from 40 to 70 mph were clocked for about 7 minutes. The wind gradually subsided to an average of 15 to 25 mph by 3:30 p.m.

This same storm of June 3, 1963, caused considerable damage to a small area when it spawned a tornado in Bountiful, Utah, just to the north of Salt Lake City. The tornado touched down around 3 p.m. near the Bountiful Elementary School, with an estimated $20,000 damage to the school. The tornado moved toward the east northeast for about 1500 to 2000 feet, then lifted off the ground. The funnel then came down again a mile or so east northeast of the school. Debris from the school was found 5,000 feet northeast of the school. No lives were lost and no injuries were reported.

The greatest seasonal snowfall (totaled during a 12 month period that begins July 1 and ends June 30) fell during the 1951-52 season and totaled 117.3 inches. The second highest seasonal snowfall was 110.8 inches recorded during the 1973-74 season and the third highest seasonal snowfall was 98.0 inches during the 1983-84 season. The mean seasonal snowfall for the 58 season period from 1928-29 to 1985-86 is 58.9 inches.

The season with the least number of days with snowfall was 1939-40. There were only 9 days during the entire season that experienced snowfall of 0.1 inch or more. This was in sharp contrast to the record setting 1973-74 season when there were 52 days with 0.1 inch or more of snowfall. The average number of days with snowfall each season is 34.

The snowiest month of the year appears to be January with an average of 9 days with snowfall of 0.1 inch or more, and with an average monthly snowfall total of 13.2 inches. However, the greatest monthly snowfall total at the Salt Lake Airport was 41.9 inches that fell in March 1977. It may be surprising to many to note that significant amounts of snow can fall as late as April. In April 1974, a total of 26.4 inches of snow fell at the Salt Lake Airport. This not only set the record for the most snow ever accumulated in the month of April, but was also the greatest monthly snowfall for the entire 1973-74 season. April 1984 was also a very snowy month with a total accumulation of 25.1 inches.

The greatest snowfall in any 24 hour period was 18.4 inches that fell October 17-18, 1984. This snowfall not only broke the previous 24 hour record of 18.1 inches set in December 1972, but it also crushed the previous October record of 8.5 inches also set in 1972. This record setting snow storm closed schools and sent tree limbs, still with their fall foliage, crashing into power lines. Many electric meters were actually ripped off homes by the falling limbs. Electricity was blacked out to an estimated 20,000 homes and businesses. It was not until 3 days after the snowstorm that the utility company finally got electrical power completely restored. The restoral cost was estimated to be at least $500,000. City officials estimated the cost for cleaning up fallen and broken tree limbs to be several thousand dollars. In addition to the thousands of trees damaged on private property, it was estimated that at least 10,000 trees were damaged on city property. Slippery roads caused by the snowfall

caused a chain reaction accident on the freeway just north of Salt Lake City involving more than 50 vehicles and sending 16 people to the hospital. This snowfall was enhanced in a 25 mile wide band along the Wasatch Front. Very unseasonably cold northwest winds blew across the mid 50 degree temperature surface water of the Great Salt Lake. This resulted in snowfall enhancement along and down wind of the Great Salt Lake. Section V below explains this local topography effect upon the Salt Lake weather.

The wettest calendar year was 1983 when 24.26 inches of precipitation was recorded. The second wettest was just a year earlier, 1982, with an equivalent liquid water total of 22.86 inches. The driest year was 1979 when only 8.70 inches fell. The normal (based on the period 1951-1980) calendar year precipitation total is 15.31 inches. There is an annual average of 88 days during which 0.01 inch or more of precipitation falls.

April has the distinction of having the highest average monthly precipitation with 2.21 inches followed by March with an average of 1.72 inches. The greatest total monthly precipitation of 7.04 inches fell in September 1982 when moisture from the remains of hurricane Olivia moved north through Utah. The driest month of the year is July with a monthly precipitation average of only 0.72 inches. The next driest is September with a monthly average of 0.89 inches.

The maximum 24 hour precipitation (not confined to a calendar day) ever recorded at the Salt Lake Airport was 2.41 inches on April 22-23, 1957. The maximum one hour precipitation of 1.94 inches was recorded during heavy thundershowers between noon and 1 p.m. on July 13, 1962. On that same day, hailstones up to one-half inch in diameter fell and the total 24 hour rainfall was 2.28 inches.

Thundershowers on September 5, 1970, gave 2.19 inches of precipitation which was the greatest calendar day precipitation ever recorded at the airport. The storms on this day were associated with a strong cold front. High winds lashed across the area, causing hundreds of traffic accidents. Surface wind gusts to 40 mph were observed at the airport, and gusts to 55 mph were reported elsewhere in the Salt Lake Valley. Deseret News reported that all intersections on the 7th East thoroughfare were flooded during the early morning hours, as were many other intersections in the city.

V. LOCAL TOPOGRAPHY EFFECTS UPON THE SALT LAKE WEATHER

Snowfall enhancement along and downwind of the Great Salt Lake is often observed. On occasion it appears that the snow area extends continuously from the lee shores of the lake to the windward slopes of the nearby mountains. The theory of this phenomenon is as follows. The Great Salt Lake, due to its high salt content, never freezes during the winter. Cold air masses moving from the Pacific or out of Canada during the winter months are sometimes much colder than

the water surface of the lake. As these cold air masses pass over the lake, the air is modified by the absorption of heat and moisture rising off the surface of the lake and becomes more unstable. An example would be air carried by west to northwest winds blowing across the Great Salt Lake in the rear of a winter low pressure system gaining both moisture and instability over the water. Then the induced vertical motion due to differential friction as the air moves off the water to land results in bands of heavy snow in the valley. Nearby mountain ranges force the air to be cooled by the orographic lift up the mountain slopes. This orographic lift often prolongs and increases precipitation along the windward slopes of the mountains. One such lake-effect snow storm occurring October 17-18, 1984 was documented by WSFO Salt Lake City forecaster David Carpenter in NOAA Technical Memorandum NWS WR-190.

The surface wind pattern around the Salt Lake Valley and adjacent bench areas is greatly influenced by local topography. For example, the Great Salt Lake is responsible for local lake breezes and the surrounding mountains and valleys for canyon winds.

The Great Salt Lake breeze is caused by the temperature difference of the colder lake surface and the warmer adjacent land when it is heated by the sun. Because the air over the land is warmer, it rises and is replaced by the cooler air from the lake surface. This breeze usually blows on relatively calm, sunny, summer days, and alternates with the oppositely directed nighttime land breeze.

Canyon breezes occur almost every night when the sky is clear or partly cloudy. They are the result of the radiational cooling of the surface layer of air on the mountain slopes. This air cools much faster than air at the same level in the free atmosphere over the valley and, hence, sinks. The air aloft flowing toward the mountain slope to replace this sinking air gives a circulation similar to the sea-breeze circulation. Such breezes usually do not extend more than a few miles into the valleys and rarely reach excessive speeds. In fact, during the summer these cool winds are a refreshing change from the heat of the day. Only when this nocturnal cooling process is reinforced by large scale circulation do the winds reach high speeds.

The strongest canyon winds develop when the ambient pressure field augments the normal mountain-valley winds. This takes place when the pressure is high over Wyoming and significantly lower in Utah and/or Arizona. Occasionally the cold polar or arctic air associated with high pressure in Wyoming is deep enough to spill over the mountains. Sometimes this can result in jet-effect easterly winds blowing out of the mouths of canyons and steep slopes of the Wasatch Mountains into the nearby plains. In extreme cases these winds can exceed hurricane force. They are mainly limited to the mouths of the canyons, especially in winter, but in some circumstances these winds can extend into the valley. Canyon winds can cause snow to drift over heavily traveled highways, break tree limbs, topple structures, and, in general, make life unpleasant.

An example of very strong canyon winds occurred on April 4-5, 1983. In this instance a very strong high pressure system moved into Wyoming with significantly lower pressure in Southern Utah, Arizona, and Nevada. Ferocious winds developed and roared out of the mouths of the canyons along the Wasatch Front Range in northern Utah. One gust of wind to 104 mph was recorded at Hill Air Force Base and wind gusts to 65 mph or more were common. Five large electrical transmission structures located between Farmington and Layton, Utah, were blown down and tangled like match sticks. The high winds turned power lines into electrical spaghetti. At least 12 semi-trailer trucks were overturned by the high winds on Interstate 15 in Davis County. A south bound Union Pacific freight train had 12 of its 36 flatbed cars derail, each of which was carrying loaded truck trailers. Trees, some as large as 100 feet tall, were uprooted. Some of them tore out power lines and damaged nearby property.

VI. AIR POLLUTION AND TRAPPED AIR

Air pollution caused by stagnant air trapped under temperature inversions is another big part of the Salt Lake weather regime. In Salt Lake City, the worst air stagnation occurs with stationary high pressure, both at the surface and aloft, and mainly in the months of November through February. Under this synoptic pattern, the wind is largely controlled by local topography rather than ambient pressure gradients; hence, it is very light and subject to diurnal variation. These light winds, when combined with frequent snow cover during the winter months, result in strong nighttime radiational cooling. At the same time there is usually warm-air advection aloft. This creates a strong surface based temperature inversion under which cold, stable air is trapped in the valley. This air often becomes very stagnant. Such a stagnant layer is generally confined to below 6,000 feet ASL and diurnal heating is frequently unable to activate much vertical mixing in the stagnant layer. Under these conditions, bench locations above 6,000 feet ASL surrounding the valley often enjoy good ventilation or movement of air and may be much warmer than valley locations. This is due to warm advection and relatively mild temperatures above the lower temperature inversion as well as the fact that the wind above 6,000 feet ASL is usually still controlled by pressure gradients and frequently stronger than the lower level winds.

There are situations that can allow some air mixing in the Salt Lake Valley that may present a problem at the surrounding higher elevations. This can happen when there is a subsidence inversion or stable layer of air between about 6 and 12 thousand feet. Subsidence is a descending motion of air in the atmosphere. A subsidence inversion is a temperature inversion produced by the adiabatic warming of this layer of subsiding air. In an adiabatic process compression or descending motion always results in warming, rising motion results in expansion and cooling. Surface heating usually allows mixing of the air to the base of this stable layer aloft, which gives a moderate mixing depth of air in the valley. However, if

the bases of the stable layer is at or just above the surrounding mountain areas, surface heating may not affect it so that it may severely restrict the vertical transport of pollutants.

VII. SOLAR ENERGY AND SKY COVER

Salt Lake City is one city out of a 38-station network operated by the National Oceanic and Atmospheric Administration (NOAA) that takes solar radiation observations. The measuring instrument is called a pyranometer which measures direct and diffuse radiation on a horizontal surface. Diffuse radiation is scattered beam solar radiation, and direct radiation is parallel beam radiation from the sun.

Solar energy is in the form of electromagnetic waves that travel through space at 186,000 miles per second. Some of these waves are visible as light, but most are either too short to be seen, such as ultraviolet rays, or too long, such as infrared rays. These waves arrive at the top of the earth's atmosphere carrying energy at a near constant rate of 444 BTUs per hour for every square foot of area. Some of this energy is absorbed by the earth and its atmosphere, but a far greater part is returned to space again by reflection from clouds, or scattering caused by the radiation being deflected by small particles or air molecules and sent out in all directions. The average amount falling over a year's time on a square foot of ground in the United States is only about 13% of the amount that arrived at the top of the earth's atmosphere or about 58 BTU's per hour (17 watts).

The amount of energy received at a given location is also dependent on the angle of the sun and the length of day. It is important to note that 20 minutes of sunshine at noon delivers much more energy than 20 minutes near sunrise or sunset.

The depletion of solar radiation is greatest by reflection from the upper surface of clouds. On some days 80 percent of the possible sunlight energy may be reflected back into space. It has been estimated that the total energy received at the surface of the earth during completely overcast days is only 22 percent of the possible sunshine.

The average annual amount of sky cover at the Salt Lake Airport (sunrise to sunset), based on a range of 0/10 for no clouds or obscuring phenomena to 10/10 for overcast conditions, is 5.5/10. The months with the highest average amount of sky cover are December and January with 7.1/10 and 7.2/10 respectively. The months with the lowest average sky cover are July and September with both averaging 3.5/10, followed closely by August with 3.6/10.

Based on the definition that the sky is cloudy with 8/10 to 10/10 of cloud cover, partly cloudy with 4/10 to 7/10 cloud cover, and clear with 0/10 to 3/10 cloud cover; there is an annual average of

134 cloudy days at the Salt Lake Airport, 103 partly cloudy days, and 128 clear days. These values are somewhat misleading because they are based on total cloud cover without any distinction between opaque and thin clouds. Some of the days listed in our climatological data as cloudy may have experienced only high, thin clouds covering 8/10 to 10/10 of the sky with but only a few tenths of these clouds actually dense enough to block out the sun or sky.

Because solar energy is being increasingly emphasized as an alternative to fossil fuels, a more meaningful statistic than amount of sky cover may be the percent of possible sunshine received. At the Salt Lake Airport, the annual average percent of possible sunshine received is 70 percent. The sunniest days of the year are in July and September with each of these months receiving 84 percent of possible sunshine. The lowest average amount of possible sunshine is received in December with 40 percent followed by January with 48 percent.

Sunlight is usually measured in footcandles, the illuminance provided by a light source of one candle at a distance of one foot and only the visible portion of the solar spectrum is used. Full sunlight, when the sun is at its zenith, produces an illuminance of the order of 10,000 footcandles on a horizontal surface compared to full moonlight, which provides an illuminance of only about 0.02 footcandles.

The energy from this sunlight is measured in kilojoules per square meter or the langley unit which is defined as a unit of energy per unit area and is equal to one gram-calorie per square centimeter. To convert kilojoules to langleys, you multiply the kilojoule value by 0.02390.

An accurate conversion of these illumination/radiation factors is impossible, but a rough comparison on a cloudy or a cloudless day is as follows: to convert langley per minute to footcandles on a cloudless day, multiply by 6700. To convert langleys per minute to footcandles on a cloudy day, multiply by 7000.

The mean daily solar radiation (in langleys) at Salt Lake City by month is as follows: January 163, February 256, March 354, April 479, May 570, June 621, July 620, August 551, September 446, October 316, November 204, and December 146 for an annual average of 394.

VIII. ACKNOWLEDGMENTS

Mr. Wilbur E. Figgins (now retired) is responsible for the original research and preparation of this document. Since his retirement in 1985, Mr. Alexander Smith of the Salt Lake City WSFO staff has undertaken the responsibility to keep it updated as well as computerizing much of the content.

We would like to thank Mr. Bill Alder, Meteorologist in Charge, Salt Lake City Weather Service Forecast Office, for his encouragement, support, and advice which helped us complete this project. We are very grateful to Mr. L. W. Snellman, former Chief, Scientific Services Division, Western Region Headquarters, for his initial review, suggestions, candor, expertise, and encouragement to pursue the project. Additionally, our gratitude to Mr. Dean Jackman, Deputy Meteorologist in Charge, Salt Lake City WSFO, for his assistance in historical research, and for the use of information from his air pollution studies. Finally, our thanks to all individuals, past and present, whose attempts at organizing these records made our work easier.

IX. REFERENCES

Bowen, Walter Dean, 1958: Versatile W. W. Phelps. Thesis, Brigham Young University, Provo, Utah.

Byers, Horace Robert, SC.D.: Synoptic and Aeronautical Meteorology, pp. 3-12.

Deseret News: 1851 February 8, Vol. 1, No. 26, p. 202; 1851 March 8, Vol. 1, No. 28, pp. 219-220; 1859 January 19, p. 198; 1859 November 16, Vol. 9, No. 57, p. 296.

Jannuzzi, John A., 1978: Solar Radiation. NOAA Technical Memorandum, NWS WR-134, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, National Weather Service Western Region.

Narrative Climatological Summary. NOAA Environmental Data and Information Service, National Climatic Center, Local Climatological Data, Asheville, North Carolina.

Richardson, Arlo E., and Mitchell, Val, 1963: Tornado Report on June 3, 1963, at Bountiful, Utah.

Stout, Hosea: Diary of Hosea Stout, January 12, 1857, Vol. 6, p. 395.

X. LOCAL TOPOGRAPHY AND MAP OF SALT LAKE AIRPORT AND VICINITY

SCALE: 1 Inch Equals 2 Miles

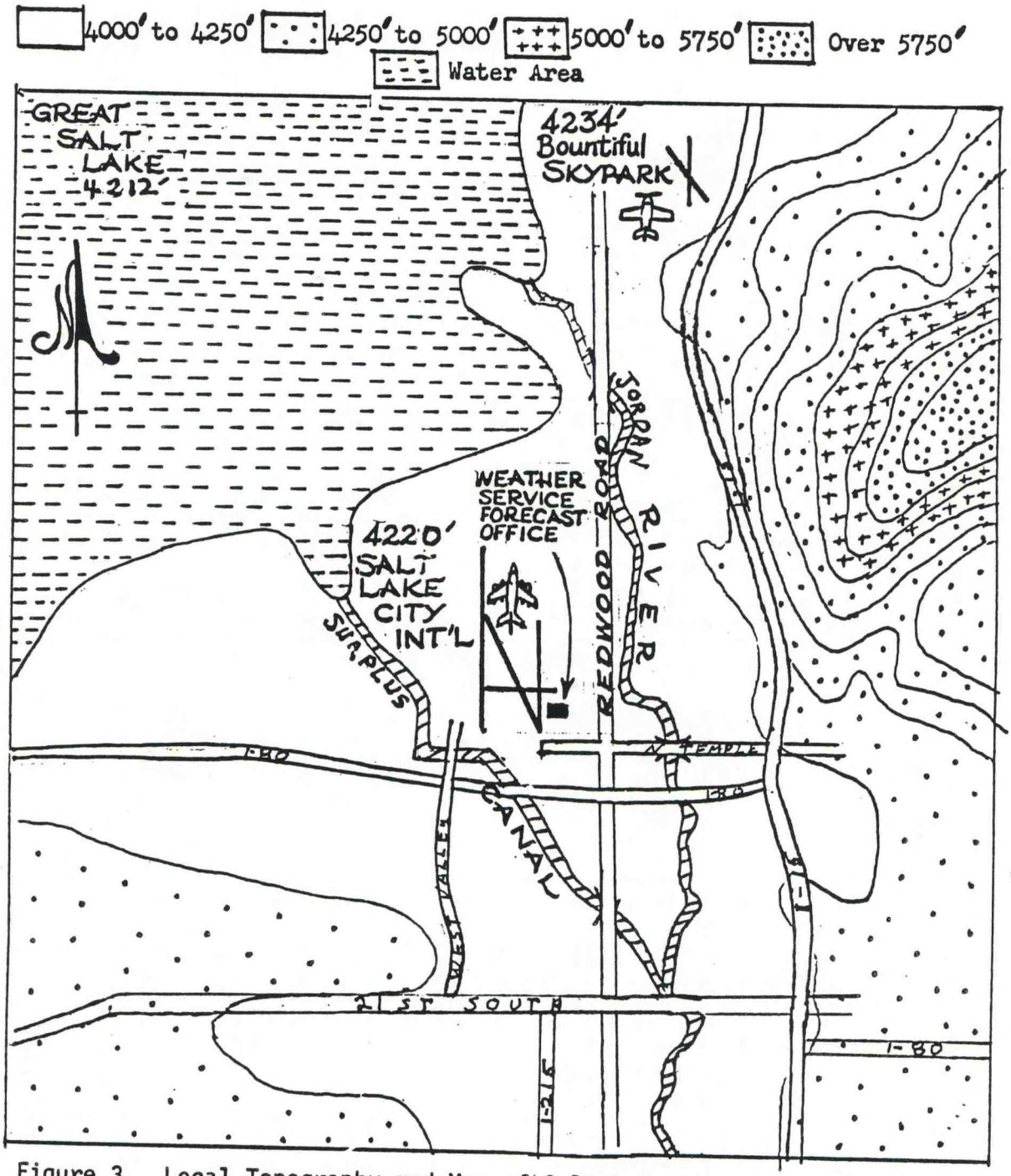

Figure 3. Local Topography and Map of Salt Lake Airport and Vicinity.

XI. TABLE 1.

SUNRISE AND SUNSET AT SALT LAKE CITY, UTAH

NO. 1297

MOUNTAIN STANDARD TIME

DAY	JAN.		FEB.		MAR.		APR.		MAY		JUNE		JULY		AUG.		SEPT.		OCT.		NOV.		DEC.	
	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.
1	7 52	5 11	7 38	5 45	7 02	6 19	6 12	6 52	5 27	7 24	4 59	7 53	5 00	8 03	5 24	7 44	5 54	7 01	6 24	6 10	6 58	5 24	7 32	5 01
2	7 52	5 12	7 37	5 46	7 01	6 20	6 10	6 53	5 25	7 25	4 58	7 53	5 00	8 03	5 25	7 43	5 55	6 59	6 25	6 09	6 59	5 23	7 34	5 01
3	7 52	5 13	7 36	5 48	6 59	6 21	6 09	6 54	5 24	7 26	4 58	7 54	5 01	8 03	5 26	7 41	5 56	6 57	6 26	6 07	7 00	5 22	7 35	5 01
4	7 52	5 14	7 35	5 49	6 58	6 22	6 07	6 56	5 23	7 27	4 58	7 55	5 02	8 03	5 27	7 40	5 57	6 56	6 27	6 05	7 02	5 21	7 36	5 00
5	7 52	5 15	7 34	5 50	6 56	6 23	6 05	6 57	5 22	7 28	4 57	7 56	5 02	8 02	5 28	7 39	5 58	6 54	6 28	6 04	7 03	5 20	7 36	5 00
6	7 52	5 15	7 33	5 51	6 55	6 24	6 04	6 58	5 21	7 29	4 57	7 56	5 03	8 02	5 29	7 38	5 59	6 52	6 29	6 02	7 04	5 19	7 37	5 00
7	7 52	5 16	7 32	5 53	6 53	6 26	6 02	6 59	5 19	7 30	4 57	7 57	5 03	8 02	5 30	7 37	6 00	6 51	6 30	6 01	7 05	5 18	7 38	5 00
8	7 52	5 17	7 31	5 54	6 51	6 27	6 01	7 00	5 18	7 31	4 56	7 57	5 04	8 01	5 31	7 35	6 01	6 49	6 31	5 59	7 06	5 17	7 39	5 00
9	7 52	5 18	7 30	5 55	6 50	6 28	5 59	7 01	5 17	7 32	4 56	7 58	5 05	8 01	5 32	7 34	6 02	6 47	6 32	5 57	7 07	5 16	7 40	5 00
10	7 52	5 19	7 29	5 56	6 48	6 29	5 57	7 02	5 16	7 33	4 56	7 58	5 05	8 01	5 33	7 33	6 03	6 46	6 33	5 56	7 09	5 15	7 41	5 00
11	7 52	5 21	7 27	5 58	6 47	6 30	5 56	7 03	5 15	7 34	4 56	7 59	5 06	8 00	5 34	7 32	6 04	6 44	6 34	5 54	7 10	5 14	7 42	5 00
12	7 51	5 22	7 26	5 59	6 45	6 31	5 54	7 04	5 14	7 35	4 56	7 59	5 07	8 00	5 35	7 30	6 05	6 42	6 36	5 53	7 11	5 13	7 43	5 00
13	7 51	5 23	7 25	6 00	6 43	6 32	5 53	7 05	5 13	7 36	4 56	8 00	5 07	7 59	5 36	7 29	6 06	6 41	6 37	5 51	7 12	5 12	7 43	5 01
14	7 51	5 24	7 24	6 01	6 42	6 33	5 51	7 06	5 12	7 37	4 56	8 00	5 08	7 59	5 37	7 28	6 07	6 39	6 38	5 49	7 13	5 11	7 44	5 01
15	7 50	5 25	7 22	6 02	6 40	6 34	5 49	7 07	5 11	7 38	4 56	8 01	5 09	7 58	5 38	7 26	6 08	6 37	6 39	5 48	7 15	5 10	7 45	5 01
16	7 50	5 26	7 21	6 04	6 38	6 35	5 48	7 08	5 10	7 39	4 56	8 01	5 10	7 57	5 39	7 25	6 09	6 36	6 40	5 46	7 16	5 09	7 46	5 01
17	7 49	5 27	7 20	6 05	6 37	6 37	5 46	7 09	5 09	7 40	4 56	8 02	5 11	7 57	5 40	7 23	6 10	6 34	6 41	5 45	7 17	5 08	7 46	5 02
18	7 49	5 28	7 18	6 06	6 35	6 38	5 45	7 10	5 08	7 41	4 56	8 02	5 11	7 56	5 41	7 22	6 11	6 32	6 42	5 43	7 18	5 08	7 47	5 02
19	7 48	5 29	7 17	6 07	6 33	6 39	5 43	7 11	5 07	7 42	4 56	8 02	5 12	7 55	5 42	7 21	6 12	6 31	6 43	5 42	7 19	5 07	7 47	5 03
20	7 48	5 31	7 16	6 08	6 32	6 40	5 42	7 12	5 06	7 43	4 56	8 02	5 13	7 55	5 43	7 19	6 13	6 29	6 44	5 41	7 20	5 06	7 48	5 03
21	7 47	5 32	7 14	6 10	6 30	6 41	5 41	7 13	5 06	7 44	4 56	8 03	5 14	7 54	5 44	7 18	6 14	6 27	6 45	5 39	7 22	5 06	7 49	5 03
22	7 46	5 33	7 13	6 11	6 28	6 42	5 39	7 14	5 05	7 45	4 57	8 03	5 15	7 53	5 45	7 16	6 15	6 25	6 47	5 38	7 23	5 05	7 49	5 04
23	7 46	5 34	7 11	6 12	6 27	6 43	5 38	7 15	5 04	7 45	4 57	8 03	5 16	7 52	5 46	7 15	6 16	6 24	6 48	5 36	7 24	5 04	7 50	5 04
24	7 45	5 35	7 10	6 13	6 25	6 44	5 36	7 16	5 03	7 46	4 57	8 03	5 17	7 51	5 47	7 13	6 17	6 22	6 49	5 35	7 25	5 04	7 50	5 05
25	7 44	5 37	7 08	6 14	6 23	6 45	5 35	7 18	5 03	7 47	4 57	8 03	5 17	7 51	5 48	7 12	6 18	6 20	6 50	5 33	7 26	5 03	7 50	5 06
26	7 44	5 38	7 07	6 15	6 22	6 46	5 33	7 19	5 02	7 48	4 58	8 03	5 18	7 50	5 49	7 10	6 19	6 19	6 51	5 32	7 27	5 03	7 51	5 06
27	7 43	5 39	7 05	6 17	6 20	6 47	5 32	7 20	5 01	7 49	4 58	8 03	5 19	7 49	5 50	7 09	6 20	6 17	6 52	5 31	7 28	5 02	7 51	5 07
28	7 42	5 40	7 04	6 18	6 18	6 48	5 31	7 21	5 01	7 50	4 59	8 03	5 20	7 48	5 50	7 07	6 21	6 15	6 53	5 29	7 29	5 02	7 51	5 08
29	7 41	5 42	7 03	6 19	6 17	6 49	5 29	7 22	5 00	7 50	4 59	8 03	5 21	7 47	5 51	7 05	6 22	6 14	6 55	5 28	7 30	5 02	7 52	5 08
30	7 40	5 43			6 15	6 50	5 28	7 23	5 00	7 51	4 59	8 03	5 22	7 46	5 52	7 04	6 23	6 12	6 56	5 27	7 31	5 01	7 52	5 09
31	7 39	5 44			6 14	6 51			4 59	7 52			5 23	7 45	5 53	7 02			6 57	5 26			7 52	5 10

Add one hour for Daylight Saving Time if and when in use.

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XII. **TABLE 2.** **Normals, Means, And Extremes**

Month	Temperatures °F: Normal: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	Normal Degree days Base 65 °F: Heating	Cooling	Precipitation in inches: Water equivalent: Normal	Maximum monthly	Year	Minimum monthly	Year	Maximum in 24 hrs.	Year	Snow, Ice pellets: Maximum monthly	Year	Maximum in 24 hrs.	Year	Relative humidity pct.: Hour 05 (Local time)	Hour 11	Hour 17	Hour 23	Wind: Mean speed m.p.h.	Prevailing direction thru 1963	Fastest mile: Speed m.p.h.	Direction	Year	Pct. of possible sunshine	Mean sky cover, tenths, sunrise to sunset	Mean number of days: Sunrise to sunset: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Ice pellets 1.0 inch or more	Thunderstorms	Heavy fog, visibility ¼ mile or less	Temperatures °F: Max. (b) 90° and above	32° and below	Min. 32° and below	0° and below	Average station pressure mb. Elev. 4227 feet m.s.l.
(a)				55		55					55		55		55		55		55		24	24	24	24	54	32	48	48		45	48	55	55	55	55	55	55	55	24	24	24	24	11
J	37.4	19.7	28.6	62	1982	-22	1949	1128	0	1.35	3.14	1940	0.09	1961	1.36	1953	32.3	1937	10.7	1980	78	70	68	77	7.7	SSE	59	NW	1980	46	7.3	6	6	19	10	4	*	4	0	10	27	2	873.7
F	43.7	24.4	34.1	69	1972	-30	1933	865	0	1.33	3.22	1936	0.12	1946	1.05	1958	27.9	1969	8.7	1944	77	63	58	76	8.2	SE	56	SE	1954	55	7.1	5	7	16	9	3	1	2	0	3	22	*	873.1
M	51.5	29.9	40.7	78	1960	2	1966	753	0	1.72	3.97	1983	0.10	1956	1.83	1944	41.9	1977	15.4	1948	71	52	46	68	9.3	SSE	71	NW	1954	64	6.7	7	8	16	10	3	1	*	0	1	18	0	868.7
A	61.1	37.2	49.2	85	1980	14	1936	474	0	2.21	4.90	1944	0.45	1981	2.41	1957	26.4	1974	16.2	1978	67	44	39	62	9.5	SE	57	NW	1964	67	6.4	7	9	14	10	1	2	*	0	0	8	0	869.5
M	72.4	45.2	58.8	93	1958	25	1965	220	28	1.47	4.76	1977	T	1934	2.03	1942	7.5	1975	6.4	1975	66	39	33	58	9.4	SE	57	NW	1953	72	5.7	9	11	11	8	*	5	*	1	0	1	0	868.9
J	83.3	53.3	68.3	104	1979	35	1962	53	152	0.97	2.93	1947	0.01	1946	1.88	1948	T	1982	T	1982	60	31	26	50	9.4	SSE	63	W	1963	79	4.4	14	10	6	5	0	5	0	9	0	0	0	870.0
J	93.2	61.8	77.5	107	1960	40	1968	0	388	0.72	2.57	1982	T	1963	2.35	1962	0.0		0.0		51	26	21	42	9.5	SSE	49	W	1936	84	3.5	17	10	4	4	0	7	0	25	0	0	0	871.4
A	90.0	59.7	74.9	104	1979	37	1965	0	311	0.92	3.66	1968	T	1944	1.96	1932	0.0		0.0		55	29	23	45	9.6	SSE	58	SW	1946	82	3.7	16	10	5	6	0	8	0	19	0	0	0	871.4
S	80.0	50.0	65.0	100	1979	27	1965	97	97	0.89	7.04	1982	T	1951	2.30	1982	4.0	1971	4.0	1971	61	35	28	54	9.1	SE	61	W	1952	83	3.6	17	8	5	5	*	4	0	4	0	*	0	872.3
O	66.7	39.3	53.0	89	1963	16	1971	377	5	1.14	3.91	1981	0.00	1952	1.47	1947	16.6	1971	8.5	1971	69	43	41	66	8.5	SE	67	NW	1950	72	4.6	14	8	9	6	*	2	*	0	*	6	0	873.8
N	50.2	29.2	39.7	75	1967	-14	1955	759	0	1.22	2.57	1934	0.01	1939	1.13	1954	19.5	1973	11.0	1930	74	57	58	73	7.9	SSE	63	NW	1937	54	6.2	9	7	14	7	2	*	1	0	1	18	0	873.5
D	38.9	21.6	30.3	67	1969	-21	1932	1076	0	1.37	4.37	1983	0.08	1976	1.82	1972	35.2	1972	18.1	1972	78	70	71	78	7.5	SSE	54	S	1955	43	7.2	6	7	18	9	4	*	4	0	8	27	1	874.5
YR	64.0	39.3	51.7	107	JUL 1960	-30	FEB 1933	5802	981	15.31	7.04	SEP 1982	0.00	OCT 1952	2.41	APR 1957	41.9	MAR 1977	18.1	DEC 1972	67	47	43	62	8.8	SSE	71	NW	MAR 1954	69	5.5	127	101	137	90	18	36	11	57	23	127	3	871.7

NOTE: NORMAL COOLING DEGREE DATA PUBLISHED IN THE 1982 ANNUAL WERE FOR THE 1951-1980 PERIOD.

NORMALS, MEANS, AND EXTREMES TABLE NOTE(S):

(a) Length of record, years, through the current year unless otherwise noted, based on January data.
(b) 70° and above at Alaskan stations.
* Less than one half.
T Trace.
BLANK entries denote missing or unreported data.

NORMALS - Based on record for the 1951-1980 period.
MEANS - Length of record in (a) is for complete data years.
EXTREMES - Length of record in (a) may be for other than complete or consecutive data years. Date is the most recent in cases of multiple occurrence.
WIND DIRECTION - Numerals indicate tens of degrees clockwise from true north. 00 indicates calm.
FASTEST MILE WIND - Speed is fastest observed 1-minute value when direction is in tens of degrees.

Means and extremes above are from existing and comparable exposures.
Annual extremes have been exceeded at other sites in the locality as follows:
Precipitation
Maximum in 24 hours: 2.72 in May 1901.

XIII. **Table 3a.**

CLIMATOGRAPHY OF THE UNITED STATES NO. 84

DAILY NORMALS OF TEMPERATURE, HEATING AND COOLING DEGREE DAYS AND PRECIPITATION 1951-80

427598 SALT LAKE CITY WSFO LATITUDE: 40 47N LONGITUDE: 111 57W ELEVATION: 4222 FT.

	DECEMBER						JANUARY						FEBRUARY					
	TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY	
DAILY	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP
1	43	25	34	31	0	.04	36	19	28	37	0	.05	40	22	31	34	0	.04
2	43	24	34	31	0	.04	36	19	28	37	0	.05	40	22	31	34	0	.04
3	42	24	33	32	0	.04	36	19	28	37	0	.04	41	22	31	34	0	.04
4	42	24	33	32	0	.04	36	19	28	37	0	.04	41	22	32	33	0	.04
5	42	24	33	32	0	.04	36	19	28	37	0	.04	41	23	32	33	0	.04
6	41	23	32	33	0	.04	36	19	28	37	0	.04	42	23	32	33	0	.04
7	41	23	32	33	0	.04	36	19	28	37	0	.04	42	23	32	33	0	.04
8	41	23	32	33	0	.04	36	19	28	37	0	.04	42	23	33	32	0	.05
9	40	23	31	34	0	.04	36	19	28	37	0	.04	42	23	33	32	0	.05
10	40	23	31	34	0	.04	37	19	28	37	0	.04	43	24	33	32	0	.05
11	40	22	31	34	0	.04	37	19	28	37	0	.04	43	24	33	32	0	.05
12	39	22	31	34	0	.04	37	19	28	37	0	.04	43	24	34	31	0	.05
13	39	22	31	34	0	.05	37	19	28	37	0	.04	43	24	34	31	0	.05
14	39	22	30	35	0	.05	37	19	28	37	0	.04	44	24	34	31	0	.05
15	39	22	30	35	0	.05	37	19	28	37	0	.04	44	25	34	31	0	.05
16	38	21	30	35	0	.05	37	19	28	37	0	.04	44	25	35	30	0	.05
17	38	21	30	35	0	.05	37	20	28	37	0	.04	44	25	35	30	0	.05
18	38	21	30	35	0	.05	37	20	28	37	0	.04	45	25	35	30	0	.05
19	38	21	29	36	0	.05	37	20	28	37	0	.04	45	25	35	30	0	.05
20	38	21	29	36	0	.05	38	20	29	36	0	.04	45	25	35	30	0	.05
21	37	21	29	36	0	.05	38	20	29	36	0	.04	45	26	36	29	0	.05
22	37	20	29	36	0	.05	38	20	29	36	0	.04	46	26	36	29	0	.05
23	37	20	29	36	0	.05	38	20	29	36	0	.05	46	26	36	29	0	.05
24	37	20	29	36	0	.05	38	20	29	36	0	.05	46	26	36	29	0	.05
25	37	20	29	36	0	.05	39	20	29	36	0	.05	46	26	36	29	0	.05
26	37	20	28	37	0	.04	39	21	30	35	0	.05	47	26	37	28	0	.05
27	37	20	28	37	0	.04	39	21	30	35	0	.05	47	27	37	28	0	.05
28	37	20	28	37	0	.04	39	21	30	35	0	.05	47	27	37	28	0	.05
29	37	20	28	37	0	.04	39	21	30	35	0	.05						
30	36	19	28	37	0	.04	40	21	30	35	0	.05						
31	36	19	28	37	0	.04	40	22	31	34	0	.05						
MONTHLY	38.9	21.6	30.3	1076	0	1.37	37.4	19.7	28.6	1128	0	1.35	43.7	24.4	34.1	865	0	1.33
WINTER	39.9	21.9	30.9	3069	0	4.05							ANNUAL	64.0	39.3	51.7	5802	981	15.31

NOTES :
DEGREE DAYS BASE TEMPERATURE = 65 DEG F; TEMPERATURE UNITS = DEG F; PRECIPITATION UNITS = INCHES; * = LESS THAN 1 BUT GREATER THAN 0

THE DAILY VALUES PRESENTED IN THESE TABLES ARE NOT SIMPLE MEANS OF OBSERVED DAILY VALUES. THEY ARE INTERPOLATED FROM THE MUCH LESS VARIABLE MONTHLY NORMALS BY USE OF THE NATURAL SPLINE FUNCTION. IN LEAP YEARS USE THE FEBRUARY 28TH VALUES FOR THE 29TH AND ADJUST THE DEGREE DAY AND PRECIPITATION MONTHLY TOTALS ACCORDINGLY. DAILY PRECIPITATION NORMALS WERE ALSO COMPUTED USING THE NATURAL SPLINE FUNCTION AND DO NOT EXHIBIT THE TYPICAL DAILY RANDOM PATTERNS. HOWEVER, THEY MAY BE USED TO COMPUTE NORMAL PRECIPITATION OVER TIME INTERVALS.

ble 3b.

CLIMATOGRAPHY OF THE UNITED STATES NO. 84

DAILY NORMALS OF TEMPERATURE, HEATING AND COOLING DEGREE DAYS AND PRECIPITATION 1951-80

427598 SALT LAKE CITY WSFO LATITUDE: 40 47N LONGITUDE: 111 57W ELEVATION: 4222 FT.

	MARCH						APRIL						MAY					
	TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY	
DAILY	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP
1	47	27	37	28	0	.05	56	33	45	20	0	.07	67	41	54	11	0	.06
2	48	27	37	28	0	.05	57	34	45	20	0	.07	67	42	54	11	0	.06
3	48	27	38	27	0	.05	57	34	45	20	0	.07	68	42	55	10	*	.06
4	48	28	38	27	0	.05	57	34	46	19	0	.07	68	42	55	10	*	.06
5	48	28	38	27	0	.05	57	34	46	19	0	.07	68	42	55	10	*	.06
6	49	28	38	27	0	.05	58	35	46	19	0	.07	69	43	56	10	*	.06
7	49	28	39	26	0	.05	58	35	47	18	0	.07	69	43	56	9	*	.06
8	49	28	39	26	0	.05	58	35	47	18	0	.07	69	43	56	9	*	.05
9	49	28	39	26	0	.05	59	35	47	18	0	.08	70	43	57	8	*	.05
10	50	29	39	26	0	.05	59	36	47	18	0	.08	70	44	57	8	*	.05
11	50	29	39	26	0	.05	59	36	48	17	0	.08	71	44	57	8	*	.05
12	50	29	40	25	0	.05	60	36	48	17	0	.08	71	44	58	8	*	.05
13	51	29	40	25	0	.05	60	37	48	17	0	.08	71	44	58	8	*	.05
14	51	29	40	25	0	.05	60	37	49	16	0	.08	72	45	58	8	*	.05
15	51	30	40	25	0	.05	61	37	49	16	0	.08	72	45	59	7	1	.05
16	51	30	41	24	0	.05	61	37	49	16	0	.08	72	45	59	7	1	.05
17	52	30	41	24	0	.05	62	38	50	15	0	.08	73	46	59	7	1	.04
18	52	30	41	24	0	.06	62	38	50	15	0	.08	73	46	60	6	1	.04
19	52	30	41	24	0	.06	62	38	50	15	0	.08	74	46	60	6	1	.04
20	53	31	42	23	0	.06	63	38	51	14	0	.08	74	46	60	6	1	.04
21	53	31	42	23	0	.06	63	39	51	14	0	.07	74	47	60	6	1	.04
22	53	31	42	23	0	.06	63	39	51	14	0	.07	75	47	61	5	1	.04
23	53	31	42	23	0	.06	64	39	52	13	0	.07	75	47	61	5	1	.04
24	54	32	43	22	0	.06	64	39	52	13	0	.07	75	47	61	5	1	.04
25	54	32	43	22	0	.06	65	40	52	13	0	.07	76	47	62	5	2	.04
26	54	32	43	22	0	.06	65	40	52	13	0	.07	76	48	62	5	2	.04
27	55	32	43	22	0	.06	65	40	53	12	0	.07	76	48	62	5	2	.04
28	55	32	44	21	0	.06	66	41	53	12	0	.07	77	48	62	5	2	.04
29	55	33	44	21	0	.07	66	41	53	12	0	.07	77	48	63	4	2	.04
30	56	33	44	21	0	.07	66	41	54	11	0	.06	77	49	63	4	2	.04
31	56	33	45	20	0	.07							78	49	63	4	2	.04
MONTHLY	51.5	29.9	40.7	753	0	1.72	61.1	37.2	49.2	474	0	2.21	72.4	45.2	58.8	220	28	1.47
SPRING	61.7	37.5	49.6	1447	28	5.40						ANNUAL	64.0	39.3	51.7	5802	981	15.31

NOTES :
DEGREE DAYS BASE TEMPERATURE = 65 DEG F; TEMPERATURE UNITS = DEG F; PRECIPITATION UNITS = INCHES; * = LESS THAN 1 BUT GREATER THAN 0

THE DAILY VALUES PRESENTED IN THESE TABLES ARE NOT SIMPLE MEANS OF OBSERVED DAILY VALUES. THEY ARE INTERPOLATED FROM THE MUCH LESS VARIABLE MONTHLY NORMALS BY USE OF THE NATURAL SPLINE FUNCTION. IN LEAP YEARS USE THE FEBRUARY 28TH VALUES FOR THE 29TH AND ADJUST THE DEGREE DAY AND PRECIPITATION MONTHLY TOTALS ACCORDINGLY. DAILY PRECIPITATION NORMALS WERE ALSO COMPUTED USING THE NATURAL SPLINE FUNCTION AND DO NOT EXHIBIT THE TYPICAL DAILY RANDOM PATTERNS. HOWEVER, THEY MAY BE USED TO COMPUTE NORMAL PRECIPITATION OVER TIME INTERVALS.

Table 3c.

CLIMATOGRAPHY OF THE UNITED STATES NO. 84

DAILY NORMALS OF TEMPERATURE, HEATING AND COOLING DEGREE DAYS AND PRECIPITATION 1951-80

427598 SALT LAKE CITY WSFO LATITUDE: 40 47N LONGITUDE: 111 57W ELEVATION: 4222 FT.

	JUNE						JULY						AUGUST					
	TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY	
DAILY	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP
1	78	49	64	3	2	.04	90	59	74	0	10	.03	94	63	78	0	13	.02
2	78	49	64	3	2	.04	90	59	74	0	10	.03	93	63	78	0	13	.03
3	79	50	64	3	2	.04	91	59	75	0	10	.03	93	62	78	0	13	.03
4	79	50	64	3	2	.04	91	60	75	0	10	.03	93	62	78	0	13	.03
5	79	50	65	3	3	.04	91	60	76	0	11	.03	93	62	77	0	12	.03
6	80	50	65	3	3	.04	92	60	76	0	11	.02	93	62	77	0	12	.03
7	80	51	65	3	3	.04	92	60	76	0	11	.02	92	62	77	0	12	.03
8	80	51	66	2	3	.03	92	61	76	0	11	.02	92	62	77	0	12	.03
9	81	51	66	2	3	.03	93	61	77	0	12	.02	92	61	77	0	12	.03
10	81	51	66	2	3	.03	93	61	77	0	12	.02	92	61	77	0	12	.03
11	81	52	67	2	4	.03	93	61	77	0	12	.02	91	61	76	0	11	.03
12	82	52	67	2	4	.03	93	62	77	0	12	.02	91	61	76	0	11	.03
13	82	52	67	2	4	.03	94	62	78	0	13	.02	91	61	76	0	11	.03
14	83	53	68	2	5	.03	94	62	78	0	13	.02	91	60	76	0	11	.03
15	83	53	68	2	5	.03	94	62	78	0	13	.02	90	60	75	0	10	.03
16	83	53	68	2	5	.03	94	62	78	0	13	.02	90	60	75	0	10	.03
17	84	54	69	1	5	.03	94	63	78	0	13	.02	90	60	75	0	10	.03
18	84	54	69	1	5	.03	94	63	78	0	13	.02	90	60	75	0	10	.03
19	85	54	69	1	5	.03	94	63	79	0	13	.02	89	59	74	0	9	.03
20	85	55	70	1	6	.03	94	63	79	0	14	.02	89	59	74	0	9	.03
21	85	55	70	1	6	.03	94	63	79	0	14	.02	89	59	74	0	9	.03
22	86	55	70	1	6	.03	95	63	79	0	14	.02	89	58	74	0	9	.03
23	86	56	71	1	7	.03	95	63	79	0	14	.02	88	58	73	0	8	.03
24	87	56	71	1	7	.03	94	63	79	0	14	.02	88	58	73	0	8	.03
25	87	56	72	1	8	.03	94	63	79	0	14	.02	88	58	73	0	8	.03
26	87	57	72	1	8	.03	94	63	79	0	14	.02	87	57	72	0	8	.03
27	88	57	72	1	8	.03	94	63	79	0	14	.03	87	57	72	0	8	.03
28	88	57	73	1	9	.03	94	63	79	0	14	.03	87	57	72	0	7	.03
29	89	58	73	1	9	.03	94	63	78	0	13	.03	86	56	71	0	7	.03
30	89	58	74	1	10	.03	94	63	78	0	13	.03	86	56	71	0	7	.03
31							94	63	78	0	13	.03	86	56	71	0	6	.03
MONTHLY	83.3	53.3	68.3	53	152	.97	93.2	61.8	77.5	0	388	.72	90.0	59.7	74.9	0	311	.92
SUMMER	88.9	58.4	73.7	53	851	2.61							ANNUAL	64.0	39.3	51.7	5802	981	15.31

NOTES :
DEGREE DAYS BASE TEMPERATURE = 65 DEG F; TEMPERATURE UNITS = DEG F; PRECIPITATION UNITS = INCHES; * = LESS THAN 1 BUT GREATER THAN 0

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ble 3d.

CLIMATOGRAPHY OF THE UNITED STATES NO. 84

DAILY NORMALS OF TEMPERATURE, HEATING AND COOLING DEGREE DAYS AND PRECIPITATION 1951–80

427598 SALT LAKE CITY WSFO LATITUDE: 40 47N LONGITUDE: 111 57W ELEVATION: 4222 FT.

	SEPTEMBER						OCTOBER						NOVEMBER					
	TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY		TEMPERATURE			DEG	DAY	
DAILY	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP	MAX	MIN	AVG	HDD	CDD	PRECIP
1	85	55	70	1	6	.03	74	45	59	7	1	.03	58	34	46	19	0	.04
2	85	55	70	1	6	.03	74	44	59	7	1	.03	57	33	45	20	0	.04
3	85	54	70	1	6	.03	73	44	58	8	1	.03	57	33	45	20	0	.04
4	84	54	69	1	5	.03	73	43	58	8	1	.03	56	33	44	21	0	.04
5	84	54	69	1	5	.03	72	43	58	8	1	.03	56	32	44	21	0	.04
6	84	53	69	1	5	.03	72	43	57	8	0	.03	55	32	44	21	0	.04
7	83	53	68	2	5	.03	71	42	57	8	0	.03	54	32	43	22	0	.04
8	83	53	68	2	5	.03	71	42	56	9	0	.03	54	31	43	22	0	.04
9	82	52	67	2	4	.03	70	42	56	9	0	.03	53	31	42	23	0	.04
10	82	52	67	2	4	.03	70	41	56	9	0	.03	53	31	42	23	0	.04
11	82	52	67	2	4	.02	69	41	55	10	0	.04	52	31	41	24	0	.04
12	81	51	66	2	3	.03	69	41	55	10	0	.04	52	30	41	24	0	.04
13	81	51	66	2	3	.03	68	40	54	11	0	.04	51	30	41	24	0	.04
14	81	51	66	2	3	.03	68	40	54	11	0	.04	51	30	40	25	0	.04
15	80	50	65	3	3	.03	68	40	54	11	0	.04	50	29	40	25	0	.04
16	80	50	65	3	3	.03	67	39	53	12	0	.04	50	29	39	26	0	.04
17	80	49	64	3	3	.03	66	39	53	12	0	.04	49	29	39	26	0	.04
18	79	49	64	4	3	.03	66	39	52	13	0	.04	49	28	39	26	0	.04
19	79	49	64	4	3	.03	65	38	52	13	0	.04	48	28	38	27	0	.04
20	78	48	63	4	2	.03	65	38	51	14	0	.04	48	28	38	27	0	.04
21	78	48	63	4	2	.03	64	38	51	14	0	.04	47	27	37	28	0	.04
22	78	48	63	4	2	.03	64	37	51	14	0	.04	47	27	37	28	0	.04
23	77	47	62	5	2	.03	63	37	50	15	0	.04	46	27	37	28	0	.04
24	77	47	62	5	2	.03	63	37	50	15	0	.04	46	27	36	29	0	.04
25	76	47	61	6	2	.03	62	36	49	16	0	.04	46	26	36	29	0	.04
26	76	46	61	6	2	.03	62	36	49	16	0	.04	45	26	36	29	0	.04
27	76	46	61	6	1	.03	61	35	48	17	0	.04	45	26	35	30	0	.04
28	75	46	60	6	1	.03	60	35	48	17	0	.04	44	26	35	30	0	.04
29	75	45	60	6	1	.03	60	35	47	18	0	.04	44	25	34	31	0	.05
30	74	45	60	6	1	.03	59	34	47	18	0	.04	43	25	34	31	0	.05
31							59	34	46	19	0	.04						
MONTHLY	80.0	50.0	65.0	97	97	.89	66.7	39.3	53.0	377	5	1.14	50.2	29.2	39.7	759	0	1.22
AUTUMN	65.7	39.5	52.6	1233	102	3.25						ANNUAL	64.0	39.3	51.7	5802	981	15.31

NOTES :
DEGREE DAYS BASE TEMPERATURE = 65 DEG F; TEMPERATURE UNITS = DEG F; PRECIPITATION UNITS = INCHES; * = LESS THAN 1 BUT GREATER THAN 0

THE DAILY VALUES PRESENTED IN THESE TABLES ARE NOT SIMPLE MEANS OF OBSERVED DAILY VALUES. THEY ARE INTERPOLATED FROM THE MUCH LESS VARIABLE MONTHLY NORMALS BY USE OF THE NATURAL SPLINE FUNCTION. IN LEAP YEARS USE THE FEBRUARY 28TH VALUES FOR THE 29TH AND ADJUST THE DEGREE DAY AND PRECIPITATION MONTHLY TOTALS ACCORDINGLY. DAILY PRECIPITATION NORMALS WERE ALSO COMPUTED USING THE NATURAL SPLINE FUNCTION AND DO NOT EXHIBIT THE TYPICAL DAILY RANDOM PATTERNS. HOWEVER, THEY MAY BE USED TO COMPUTE NORMAL PRECIPITATION OVER TIME INTERVALS.

XIV. Temperature Data:

The following graphs, Figures 4a - 4d are smoothed average hourly temperature curves made by using the average hourly temperature that was compiled for a 15-year period and then making slight adjustments necessary to incorporate the average synoptic(MST temperature observations (5 a.m., 11 a.m., 5 p.m., 11 p.m.) for the entire period from May 1928 - July 1984.

NOTE: The normal maximum and minimum temperatures (1951-1980) are also listed on each graph. This is because maximum and minimum temperature readings usually occur between the times of the hourly observations and do not fall on the average hourly temperature curve. This is especially true of the minimum temperature because of not only the variability in time of occurrence but also because of the usually short period of time in which the minimum temperature occurs. These factors should be remembered when using the graphs.

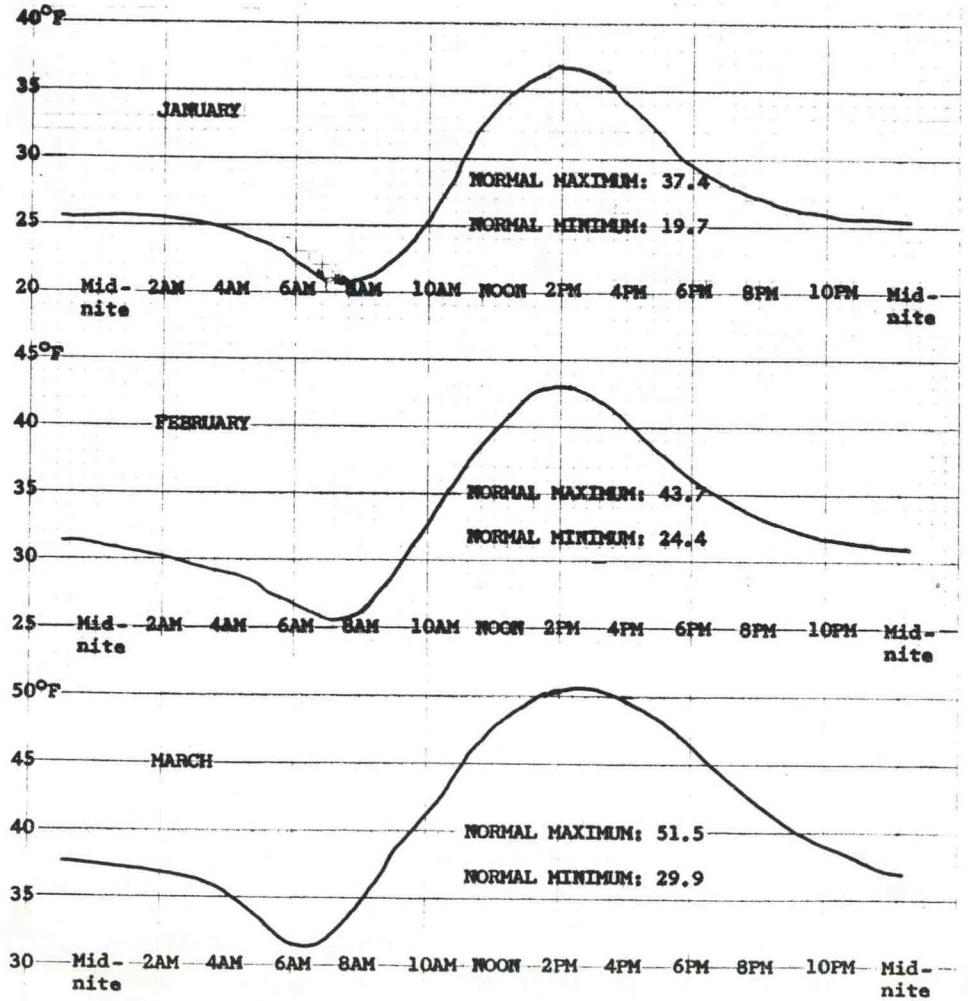


Figure 4a.

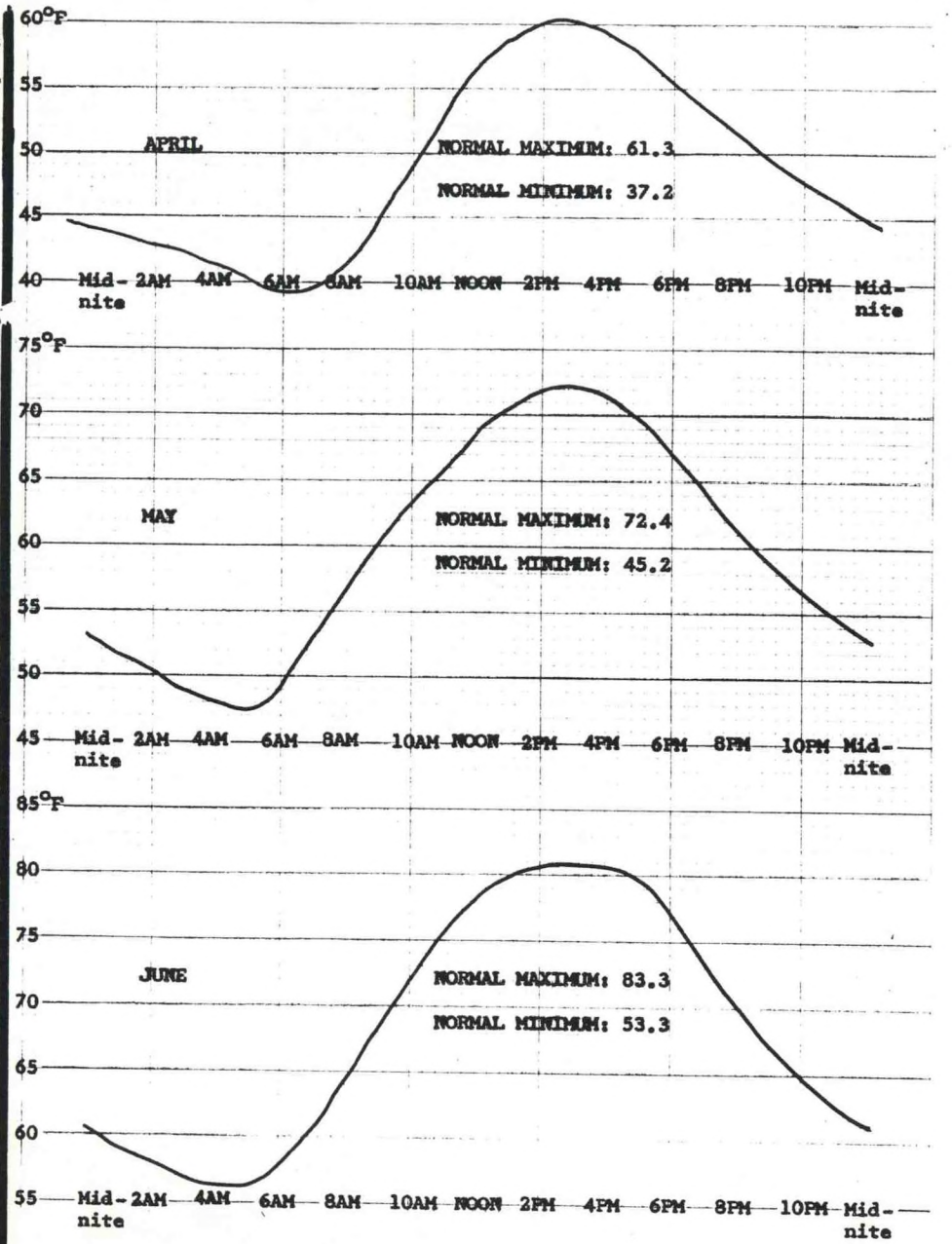
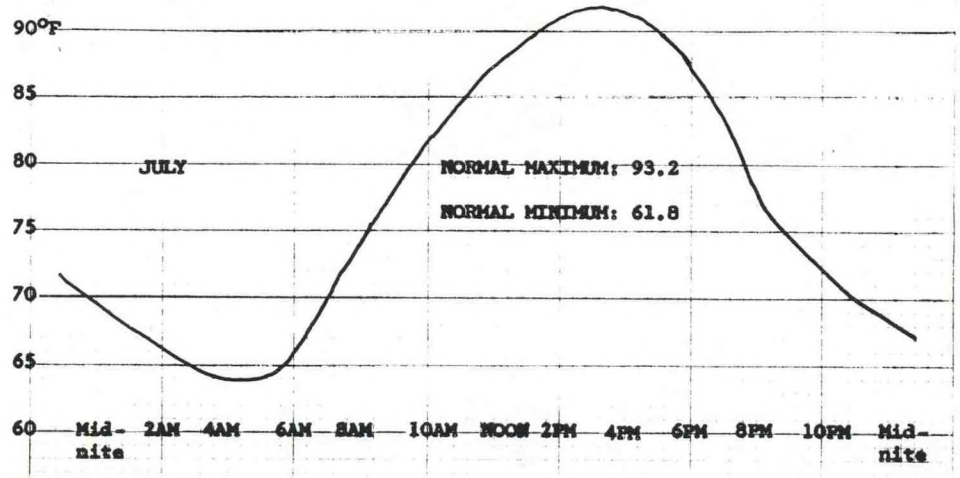
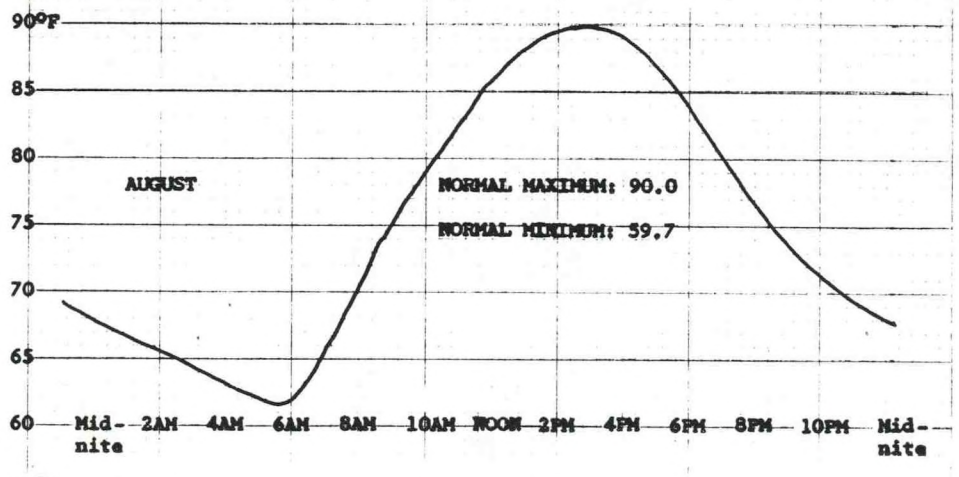


Figure 4b.





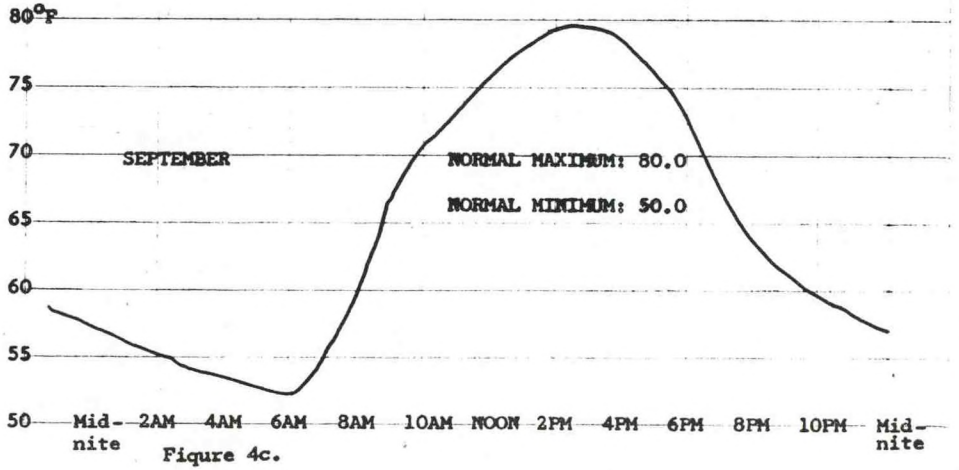
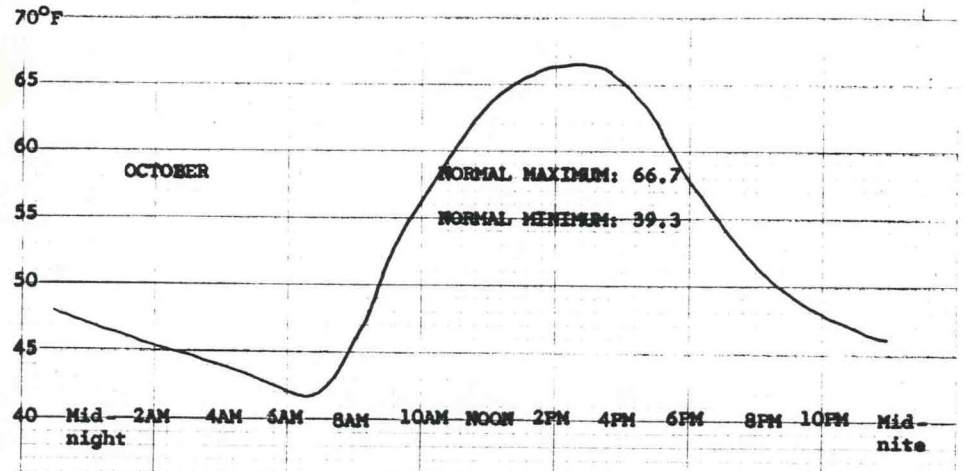
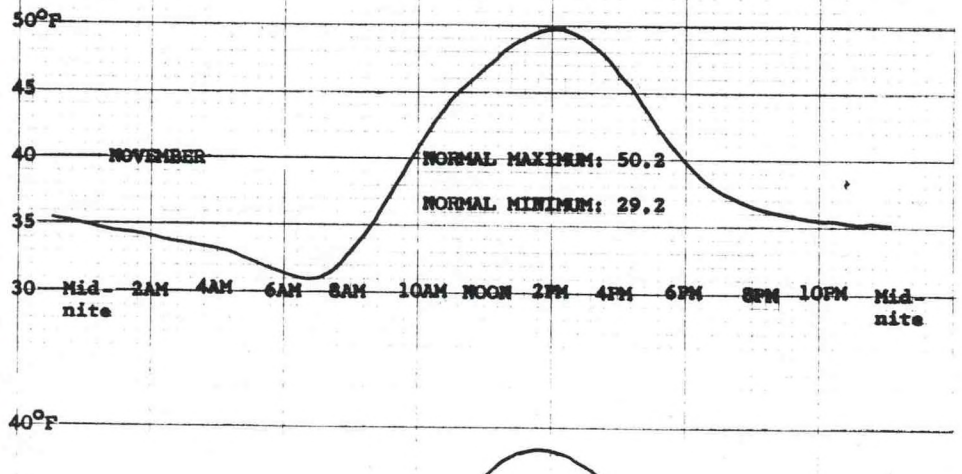


Figure 4c.





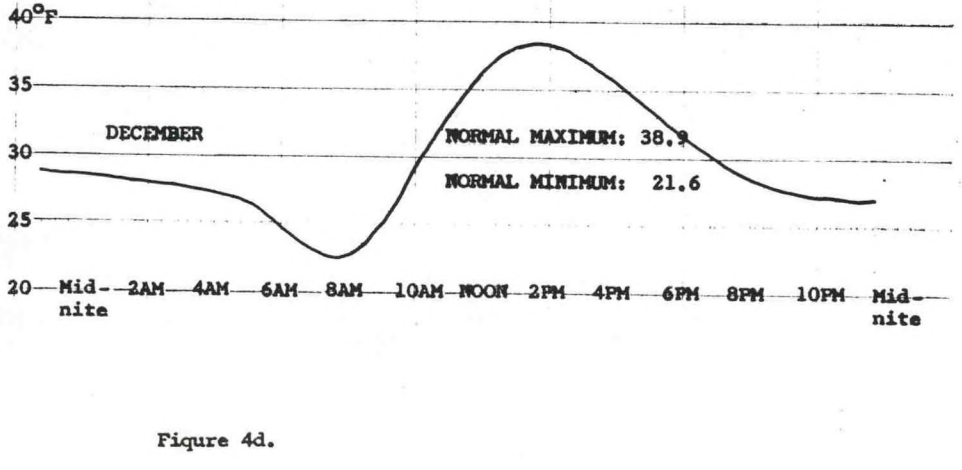


Figure 4d.

TABLE 4a

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
January 1929 - January 1986
Month: JANUARY

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	58.1	1943	14.2	1979	42.0	1934	-4.0	1931
2	49.9	1943	15.5	1942	36.7	1940	-5.5	1974
3	52.1	1934	13.8	1949	33.7	1946	-2.7	1932
4	52.9	1956	13.2	1960	35.2	1965	-13.0	1973
5	56.0	1980	14.5	1971	40.1	1978	-6.2	1973
6	54.6	1948	10.4	1971	41.8	1965	-13.2	1942
7	58.0	1956	16.0	1937	36.2	1983	-10.8	1973
8	56.6	1945	9.1	1937	39.3	1953	-10.6	1937
9	58.6	1953	7.0	1937	39.6	1980	-11.2	1937
10	56.8	1953	18.1	1937	37.0	1960	-7.8	1937
11	53.8	1953	10.2	1963	36.0	1971	-8.5	1963
12	59.7	1953	3.6	1963	40.9	1969	-18.0	1963
13	57.2	1980	7.8	1963	47.0	1980	-15.0	1963
14	59.0	1945+	16.9	1964	37.9	1970	-9.6	1932
15	56.2	1943	19.6	1947	39.8	1954	-5.6	1964
16	56.0	1974	19.2	1984	37.8	1954	-5.4	1947
17	54.4	1982	17.2	1949	39.6	1950	-9.0	1930
18	53.3	1959	15.3	1930	38.9	1950	-6.1	1984
19	52.6	1971	8.6	1963	38.1	1969	-14.8	1963
20	58.3	1953	6.6	1937	46.0	1969	-8.0	1937
21	56.8	1943	5.9	1937	45.0	1943	-19.9	1937
22	56.3	1970	7.8	1937	43.0	1970	-14.0	1930
23	60.0	1970	9.2	1937	41.4	1970	-14.0	1962
24	59.1	1970	14.0	1929	36.8	1952	-9.0	1929
25	58.7	1953	7.9	1949	35.2	1947	-21.7	1949
26	61.5	1982	18.1	1949	35.0	1971	-15.3	1949
27	54.1	1971	15.1	1949	39.2	1983	-6.5	1949
28	56.6	1938	17.8	1949	39.2	1981	-7.8	1949
29	54.3	1953	17.8	1949	36.1	1958	-11.6	1949
30	60.7	1971	18.2	1942	40.2	1965	-5.8	1979
31	61.1	1971	16.7	1951	46.4	1963	-8.1	1979
Mnth	61.5	26/ 1982	3.6	12/ 1963	47.0	14/ 1980	-21.7	25/ 1949

+ Also in earlier years

TABLE 4b

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
February 1929 - February 1986
Month: FEBRUARY

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	59.1	1963	16.8	1985	38.4	1963	-9.0	1985
2	55.5	1953	19.7	1949	37.8	1978	-4.1	1949
3	63.6	1953	22.2	1979	38.1	1953	-10.1	1949
4	59.4	1934	20.2	1982	34.8	1958	-1.1	1985
5	61.5	1963	18.2	1982	37.9	1963	0.1	1985
6	63.0	1934	20.2	1982	38.0	1934	0.4	1933
7	59.1	1943	6.0	1933	40.7	1959	-12.2	1933
8	60.4	1945	22.2	1949	39.1	1957	-7.4	1936
9	61.0	1951	8.0	1933	39.8	1938	-30.0	1933
10	67.9	1951	9.5	1933	47.7	1962	-26.4	1933
11	65.2	1961	19.2	1933	49.9	1961	-0.6	1929
12	60.5	1970	23.7	1949	38.0	1975	1.1	1949
13	60.5	1971	18.2	1949	40.0	1954	-9.0	1949
14	58.1	1971	18.8	1929	38.1	1982	-12.8	1933
15	57.6	1947	26.0	1956	44.9	1986	-3.5	1933
16	62.3	1947	22.8	1956	43.0	1986	4.1	1933
17	62.6	1930	25.7	1956	44.3	1986	-4.8	1933
18	66.2	1958	21.7	1942	51.3	1986	-0.1	1942
19	66.3	1958	23.4	1955	45.0	1958	4.4	1955
20	64.9	1958	24.7	1955	42.7	1957	0.4	1955
21	66.3	1982	24.8	1955	37.7	1941	6.2	1984+
22	64.8	1958	29.1	1955	42.9	1982	5.9	1975
23	60.4	1986	29.1	1960	44.2	1986	5.6	1960
24	68.1	1981	26.1	1960	45.9	1986	4.9	1960
25	68.2	1950	26.8	1964	45.0	1981	2.0	1933
26	67.0	1950	22.6	1962	40.2	1976	3.0	1962
27	67.2	1980	13.5	1962	44.1	1940	-2.2	1962
28	68.5	1972	25.0	1960	45.0	1940	1.0	1962
29	59.6	1976	24.0	1960	40.8	1980	-4.2	1960
Mnth	68.5	28/ 1972	6.0	7/ 1933	51.3	18/ 1986	-30.0	9/ 1933

+ Also in earlier years.

TABLE 4c

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
March 1929 - March 1986
Month: MARCH

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	66.7	1967	29.0	1971	47.4	1983	12.9	1960
2	62.6	1946	30.0	1953	48.0	1983	2.9	1971
3	61.6	1968	26.5	1966	40.2	1980	5.3	1952
4	68.2	1950	26.2	1966	42.0	1934	1.8	1966
5	67.5	1972	30.9	1955	43.0	1934	5.2	1966
6	68.5	1972	30.5	1964	41.4	1972	10.0	1964
7	65.8	1986	31.6	1964	43.0	1975	4.9	1964
8	67.7	1972	32.6	1964	46.2	1954	6.9	1964
9	74.5	1972	33.4	1964	43.0	1954	20.0	1930
10	73.2	1972	29.2	1962	45.4	1967	13.2	1964
11	67.3	1983	29.0	1962	46.0	1983	13.6	1948
12	68.2	1934	29.8	1962	45.2	1967	12.9	1956
13	70.0	1934	28.6	1962	46.0	1983	9.1	1962
14	70.0	1935	31.3	1962	42.4	1984	10.5	1964
15	71.5	1934	32.5	1943	44.8	1961	14.9	1962
16	69.0	1967	36.4	1963	43.4	1968	10.1	1963
17	67.6	1972+	33.8	1951	48.2	1974	18.2	1942
18	72.0	1972	30.7	1965	41.9	1976	11.6	1965
19	70.7	1949	34.0	1943	48.0	1975	10.0	1965
20	67.7	1934	30.6	1955	46.0	1934	17.0	1965
21	72.6	1972	32.6	1952	42.0	1934	14.1	1948
22	74.5	1972	31.7	1952	47.1	1978	16.9	1966
23	73.4	1961	31.1	1952	47.1	1967	18.9	1952
24	77.9	1956	37.8	1929	48.1	1985	18.0	1965
25	75.1	1956	36.2	1942	49.3	1956	14.4	1965
26	77.7	1960	31.6	1975	46.1	1971	18.8	1955
27	73.0	1953	27.2	1975	51.1	1960	13.7	1931
28	76.7	1943	28.0	1975	50.0	1934	18.2	1956
29	75.0	1968	35.2	1977	56.0	1943	17.0	1975
30	73.0	1978+	38.8	1967	50.0	1978	13.0	1977
31	74.6	1966	40.9	1938	51.2	1956	22.3	1948
Mnth	77.9	24/ 1956	26.2	4/ 1966	56.0	29/ 1943	1.8	4/ 1966

+Also in earlier years.

TABLE 4d

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
April 1929 - April 1986
Month: APRIL

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	73.5	1932	34.9	1936	49.8	1968	19.4	1936
2	77.1	1943	36.8	1945	45.8	1961	14.2	1936
3	76.0	1961	35.4	1955	48.4	1985	18.4	1945
4	75.7	1959	38.9	1955	45.0	1959+	20.2	1955
5	82.2	1959	41.0	1955	52.0	1954	15.3	1955
6	81.2	1930	35.4	1929	49.2	1960	24.0	1956
7	83.7	1930	37.3	1929	50.4	1930	21.0	1929
8	80.8	1977	41.0	1933	58.4	1930	25.0	1973
9	82.0	1960	37.0	1933+	52.3	1965	22.0	1933
10	75.6	1971	36.5	1974	51.4	1942	19.0	1933
11	80.0	1934	43.3	1953	52.4	1985	21.2	1929
12	81.3	1936	38.9	1945	52.0	1934	26.0	1953
13	79.0	1934	43.8	1968	52.0	1934	24.2	1945
14	81.0	1962	44.3	1945	54.0	1935	25.0	1933
15	84.7	1985	46.9	1952	55.0	1979	24.8	1945
16	84.2	1936	42.5	1976	61.2	1985	28.0	1970+
17	83.2	1946	39.9	1941	59.0	1985	24.0	1960
18	84.3	1962	40.0	1972	59.1	1946	27.0	1941
19	85.4	1962	41.0	1933	56.8	1962	24.1	1982
20	84.9	1980	39.8	1968	53.4	1980	24.3	1982
21	83.0	1934	36.2	1963	56.0	1948	22.4	1982
22	83.0	1934	44.2	1963	55.4	1980	25.9	1963
23	85.0	1934	42.8	1960	56.0	1934	26.8	1968
24	84.5	1977	43.6	1958	58.0	1930	27.4	1950
25	84.4	1946	43.7	1984	58.0	1959	26.1	1950
26	82.6	1953	40.8	1986	55.3	1981	27.0	1975
27	79.4	1952	35.9	1970	52.9	1977	30.0	1966+
28	82.9	1939	41.9	1937	55.4	1977	28.4	1966
29	81.8	1938	43.6	1970	52.2	1965	29.9	1967+
30	83.9	1959	39.6	1967	56.0	1934	28.0	1962
Mnth	85.4	19/ 1962	34.9	1/ 1936	61.2	16/ 1985	14.2	2/ 1936

+Also in earlier years.

TABLE 4e

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
May 1928 - May 1986
Month: MAY

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	86.9	1981	45.2	1954	56.2	1943	26.9	1946
2	91.3	1947	38.7	1964	60.0	1985	28.1	1967
3	91.1	1947	43.5	1950	64.0	1985	27.6	1964
4	87.8	1947	48.8	1950	58.7	1962	31.0	1964
5	87.9	1947	46.8	1964	59.0	1979	28.0	1961
6	90.7	1947	45.5	1965	59.0	1934	25.4	1965
7	89.0	1934	45.4	1975	65.0	1934	27.2	1965
8	87.2	1962	45.6	1930	59.1	1966	30.2	1931
9	86.5	1954	46.0	1933	62.4	1962	28.0	1930
10	91.6	1961	47.4	1983	58.9	1954	31.0	1948
11	91.2	1960	44.2	1983	56.0	1934	32.0	1933
12	91.9	1960	45.2	1942	62.6	1960	32.4	1967
13	91.7	1959	50.1	1942	59.4	1984	30.0	1967
14	89.1	1936	52.6	1968	66.0	1984	33.1	1967
15	88.0	1934	50.0	1955	58.2	1975	32.4	1955
16	89.7	1948	47.6	1977	59.1	1934	30.0	1955
17	89.2	1948	48.0	1977	63.8	1934	32.7	1943
18	92.3	1932	44.6	1977	63.0	1934	33.0	1971+
19	92.9	1958	53.2	1945	59.4	1970	31.0	1960
20	92.4	1958	43.4	1975	62.9	1954	33.3	1959
21	86.2	1958	50.8	1962	62.0	1958	34.5	1959
22	89.0	1934	53.8	1986	59.3	1963	33.3	1960
23	91.0	1934	54.8	1944	68.7	1934	30.2	1960
24	90.0	1934	55.5	1939	64.0	1934	34.8	1930
25	91.5	1961	54.8	1980	60.6	1964	31.6	1975
26	92.0	1958	47.9	1929	63.2	1958	34.0	1975+
27	92.7	1951	56.7	1954	67.0	1985	32.8	1929
28	92.1	1958	55.0	1935	63.4	1985	32.4	1954
29	90.9	1939	55.2	1964	62.4	1943	37.1	1946
30	92.6	1984	52.0	1937	62.3	1984	35.0	1942
31	92.7	1956	54.1	1955	61.0	1933	38.0	1946
Mnth	92.9	19/ 1958	38.7	2/ 1964	68.7	23/ 1934	25.4	6/ 1965

+Also in earlier years.

TABLE 4f

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
June 1928 - June 1986
Month: JUNE

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	91.8	1977	50.8	1955	59.9	1940	38.4	1969
2	89.2	1968	51.9	1943	61.7	1986	34.8	1954
3	91.1	1946	55.6	1955	63.3	1968	34.9	1929
4	94.1	1957	52.3	1943	65.6	1946	39.4	1962
5	93.3	1946	60.0	1945	63.2	1946	35.3	1937
6	94.7	1959	51.8	1932	67.0	1950	36.9	1954
7	100.2	1985	55.0	1932	64.2	1985	34.8	1962+
8	96.4	1961	55.9	1941	64.3	1985	38.5	1979
9	101.0	1973	56.8	1941	65.0	1956	36.0	1950
10	95.0	1961+	58.8	1945	65.5	1946	40.2	1947
11	96.1	1961	48.7	1947	64.4	1955	40.0	1929
12	97.5	1979	62.8	1928	67.0	1953	40.9	1970
13	98.1	1979	62.0	1957	70.0	1959	43.3	1966
14	100.5	1974	60.1	1945	68.8	1959	39.3	1981
15	101.5	1974	61.3	1957	70.8	1974	38.8	1945
16	99.7	1940	62.3	1957	71.9	1974	39.8	1939
17	103.3	1940	50.0	1939	72.0	1933	37.4	1939
18	101.8	1940	53.5	1975	70.3	1986	36.8	1928
19	101.0	1940	61.5	1975	68.8	1974	40.3	1938
20	101.1	1936	66.2	1975	72.7	1940	41.0	1929
21	103.5	1961	58.0	1948	66.9	1972	37.5	1960
22	101.0	1961	59.8	1948	73.6	1937	42.0	1960
23	100.0	1960+	71.2	1948	69.2	1973	44.4	1964
24	100.0	1974	63.8	1952	71.8	1959	45.3	1976
25	101.0	1981+	62.4	1969	70.0	1974	39.8	1953+
26	102.5	1970	62.9	1942	75.4	1981	42.1	1978
27	101.9	1958	60.6	1942	75.3	1981	43.4	1942
28	102.4	1961	65.0	1959	74.3	1986	40.3	1945
29	103.5	1979	63.9	1959	72.0	1935	42.2	1968
30	99.6	1973	72.8	1959	71.8	1953	39.9	1968
Mnth	103.5	29/ 1979 21/ 1961	48.7	11/ 1947	75.4	26/ 1981	34.8	7/ 1962+

+Also in earlier years.

TABLE 4g

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
July 1929 - July 1986
Month: JULY

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	101.0	1950	69.8	1928	73.1	1981	40.0	1968
2	100.3	1961	72.9	1938	70.3	1948	43.3	1968
3	100.9	1985	73.3	1983	71.0	1986	48.9	1966
4	101.8	1936	73.2	1938	69.1	1985	46.7	1938
5	103.6	1973	65.2	1982	71.0	1952	43.8	1932
6	101.7	1973	74.0	1938+	74.0	1981+	44.2	1938
7	101.5	1976	75.8	1955	73.4	1985	41.2	1928
8	100.5	1976	76.4	1937	74.0	1963	45.1	1955
9	102.1	1939	77.6	1946	72.1	1954	48.1	1959
10	103.5	1973	70.6	1983	79.0	1956	50.2	1946
11	102.5	1976	71.8	1936	76.0	1981	48.2	1983
12	103.0	1934	75.0	1936	73.5	1980	49.0	1951
13	102.3	1939	73.6	1962	69.3	1964	46.8	1943
14	102.9	1939	78.3	1962	75.6	1931	49.0	1932
15	102.7	1960	75.1	1983	75.0	1931	52.4	1962
16	103.2	1960	82.7	1940	75.1	1968	52.0	1956
17	103.1	1960	77.7	1986	73.3	1966	52.8	1943
18	103.5	1960	84.0	1976	73.0	1977	54.2	1939
19	104.1	1960	70.0	1973	71.3	1984+	52.5	1958
20	104.6	1960	79.7	1951	72.8	1960	50.2	1932
21	105.7	1931	80.0	1972+	75.0	1966	49.6	1932
22	103.1	1931	73.5	1973	74.5	1982	47.1	1954
23	103.2	1931	80.0	1986	71.9	1963	46.9	1954
24	105.4	1931	76.6	1977	77.2	1953	50.2	1954
25	103.0	1933	69.7	1941	77.4	1953	51.4	1964
26	106.6	1960	79.9	1986	74.0	1984	54.2	1932
27	103.9	1960	83.9	1941	74.2	1960	47.5	1963
28	106.4	1934	71.0	1948	76.6	1931	51.0	1929
29	103.5	1972	76.6	1950	75.4	1976	45.2	1948
30	103.0	1934	77.0	1931	74.4	1935	48.3	1950
31	100.9	1938	77.6	1975	72.9	1959	45.0	1950
Mnth	106.6	26/ 1960	65.2	5/ 1982	79.0	10/ 1956	40.0	1/ 1968

+Also in earlier years.

TABLE 4h

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
August 1928 - August 1986
Month: AUGUST

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	101.6	1979	78.5	1965	72.2	1982	49.1	1932
2	102.0	1934	78.7	1928	72.2	1981+	45.0	1928
3	101.8	1960	77.4	1951	71.8	1962	47.0	1928
4	104.0	1979	75.9	1951	70.1	1983+	47.7	1944
5	102.9	1979	78.3	1962	73.5	1946	50.4	1928
6	99.6	1983+	74.3	1939	75.1	1975	48.3	1950
7	99.1	1983+	79.2	1939	75.1	1983	49.0	1928
8	99.6	1936	81.7	1938	73.4	1983+	48.8	1976
9	103.1	1940	77.4	1985+	70.8	1932	50.6	1931
10	101.0	1935	75.8	1947	72.1	1983	50.2	1939
11	102.0	1972	72.1	1985	72.0	1928	47.8	1932
12	101.9	1940	74.1	1930	71.5	1980	48.9	1935
13	102.1	1937	74.0	1930	70.1	1970	50.2	1932
14	99.9	1960	70.2	1968	70.6	1963	47.1	1938
15	101.1	1962	68.4	1968	72.2	1943	49.0	1938
16	98.5	1986	72.0	1960	72.4	1929	47.5	1976
17	100.0	1934	70.8	1968	73.2	1986	47.9	1968
18	98.7	1932	69.6	1968	72.0	1934	44.9	1954
19	99.2	1961	65.7	1980	71.8	1932	47.0	1978
20	102.8	1960	71.4	1964	73.6	1961	40.0	1928
21	102.3	1960	70.0	1968+	74.3	1960	43.0	1964
22	97.6	1937	59.7	1968	72.7	1937	45.0	1933
23	98.7	1967	69.6	1968	68.7	1950	44.0	1933
24	98.9	1967	75.3	1951	70.0	1955	39.7	1928
25	99.6	1985	71.0	1933	69.6	1981	43.7	1928
26	100.5	1985	69.6	1977	73.7	1981	43.0	1933
27	98.7	1937	69.0	1977	69.9	1985	42.0	1964
28	96.6	1961+	74.6	1977	70.0	1984	42.2	1964
29	99.4	1948	68.2	1964	68.4	1981	36.8	1964
30	100.0	1954	61.2	1932	68.3	1983	38.3	1964
31	97.5	1950	69.3	1932	67.3	1983+	36.6	1965
Mnth		4/		22/		7/		31/
	104.0	1979	59.7	1968	75.1	1983+	36.6	1965

+Also in earlier years.

TABLE 4i

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
September 1928 - September 1986
Month: SEPTEMBER

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	96.3	1985	57.3	1973	71.0	1929	43.0	1932
2	97.6	1947	63.8	1973	68.0	1945	40.9	1964
3	96.0	1950	65.2	1941	67.1	1978	38.6	1961
4	98.0	1950	68.9	1929	71.3	1978	41.1	1964
5	96.0	1967	54.9	1970	73.1	1978	40.6	1956
6	96.7	1979	56.1	1970	70.0	1933	43.7	1943
7	98.6	1979	59.8	1928	67.2	1986	44.3	1948
8	100.0	1979	57.2	1973	69.0	1952	37.5	1962
9	94.2	1974	66.6	1928	71.6	1979	33.8	1962
10	93.8	1958	64.2	1986	65.6	1972	38.4	1932
11	93.9	1958	58.8	1950	69.9	1959	38.2	1947
12	95.4	1963	63.1	1982	69.0	1984	36.0	1928
13	93.3	1948	58.8	1982	66.1	1968	32.2	1928
14	96.0	1948	60.9	1982	63.1	1955	35.0	1928
15	92.3	1943	62.0	1933	63.7	1948	33.3	1936
16	91.0	1943	54.9	1965	64.0	1984	33.4	1936
17	93.2	1937	43.4	1965	62.2	1943	31.2	1965
18	94.0	1937	51.5	1978	64.0	1930	27.0	1965
19	96.7	1956	54.5	1978	65.0	1984	31.3	1964
20	91.0	1933	57.9	1941	62.3	1929	29.7	1965
21	89.5	1944	52.2	1961	58.2	1929	34.9	1968
22	91.1	1954	57.3	1961	62.0	1934	32.4	1968
23	91.0	1966	54.8	1941	59.4	1983	31.3	1968
24	89.0	1979	41.0	1934	60.9	1966	32.1	1961
25	89.5	1979	47.0	1934	64.3	1949	29.6	1970
26	88.7	1956	51.0	1934	60.4	1949	31.1	1970
27	90.5	1969	52.9	1982	58.7	1957	31.0	1934
28	90.0	1957	54.0	1982+	64.4	1981	30.7	1936
29	90.6	1969+	46.7	1982	62.2	1947	32.6	1986+
30	89.8	1957	49.3	1950	58.5	1938	29.5	1954
Mnth	100.0	8/ 1979	41.0	24/ 1934	73.1	5/ 1978	27.0	18/ 1965

+ Also in earlier years.

TABLE 4j

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
October 1928 - October 1986
Month: OCTOBER

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	87.7	1957	45.1	1971	65.5	1953	31.1	1950
2	87.5	1979	51.7	1971	58.5	1929	31.1	1959
3	88.6	1963	56.6	1951+	58.0	1948	31.0	1959
4	85.8	1963	53.4	1951	56.2	1963	33.0	1928
5	85.1	1947	44.7	1941	58.2	1947	29.5	1932
6	85.5	1975	46.3	1946	61.0	1975	25.7	1955
7	87.5	1979	49.6	1949	57.8	1960	30.9	1955
8	84.6	1979+	44.9	1949	57.1	1954	29.4	1959
9	84.4	1963	41.2	1960	57.0	1983	28.9	1968
10	84.7	1955	49.3	1949	63.3	1962	28.0	1932
11	84.1	1980	49.7	1947	56.0	1944	26.8	1946
12	83.1	1958	46.9	1969	58.3	1968	28.2	1986
13	84.7	1958	47.6	1966	63.4	1962	31.0	1986
14	81.1	1958	45.1	1969	56.5	1938	27.8	1954
15	83.4	1958	43.6	1980	54.7	1946	26.3	1966
16	79.2	1950	42.0	1980	53.2	1972	26.8	1930
17	82.6	1958	43.2	1938	54.0	1943	22.8	1964
18	84.2	1958	40.8	1984+	49.6	1958	23.4	1964
19	81.8	1958	43.1	1949	51.0	1955+	25.8	1976
20	81.0	1950	40.8	1949	55.2	1961	24.3	1932
21	78.6	1967	42.3	1949	48.7	1955	26.8	1958
22	77.0	1973	45.3	1935	53.0	1973	23.9	1966
23	77.1	1952	42.3	1975	51.4	1940	23.8	1935
24	77.9	1959	39.0	1956	52.6	1939	20.6	1935
25	78.2	1979	41.2	1954	51.1	1940	18.8	1932
26	79.5	1977	43.4	1970	52.8	1950	27.9	1970
27	76.3	1977	44.3	1955	51.9	1945	24.2	1970
28	75.4	1937	32.6	1971	50.1	1977	23.0	1970
29	79.2	1964	29.5	1971	60.4	1950	18.1	1971
30	77.3	1950	34.9	1971	65.9	1950	16.1	1971
31	71.8	1952	35.1	1971	48.0	1954	17.5	1935
Mnth	88.6	3/ 1963	29.5	29/ 1971	65.9	30/ 1950	16.1	30/ 1971

+ Also in earlier years.

TABLE 4k

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
November 1928 - November 1986
Month: NOVEMBER

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	71.8	1978	36.9	1971	47.8	1942	15.8	1971+
2	72.7	1965	33.4	1936	46.3	1983	13.8	1956
3	70.7	1965	30.0	1936	47.3	1968	5.5	1936
4	70.2	1983	33.0	1935	54.4	1977	15.0	1936
5	71.2	1945	37.0	1935	47.4	1945	18.0	1935
6	74.2	1931	32.1	1947	52.4	1966	15.6	1947
7	73.8	1931	35.5	1945	46.0	1973	19.0	1961
8	69.5	1973	34.0	1945	43.2	1974	16.7	1948
9	73.7	1958	31.6	1950	43.0	1949	16.9	1948
10	68.8	1973	34.3	1978	44.6	1949	13.4	1950
11	72.4	1954	35.2	1938	47.0	1954	17.0	1935
12	74.7	1967	31.2	1938	47.7	1953	14.8	1929
13	70.0	1953	34.0	1964	50.2	1981	14.2	1959
14	70.8	1967	33.0	1964	51.2	1953	3.2	1955
15	70.0	1941	14.8	1955	45.9	1966	-10.0	1955
16	67.5	1981	16.0	1955	49.1	1941	-13.6	1955
17	67.8	1981	27.6	1955	46.4	1950	9.6	1958
18	62.7	1967	29.9	1958	47.0	1942	5.8	1958
19	66.8	1943	28.0	1930	45.2	1946	3.0	1930
20	64.6	1966	25.5	1977	44.2	1966	2.0	1930
21	64.6	1932	24.9	1931	45.0	1974	5.2	1931
22	63.0	1933	26.8	1931	41.0	1981	3.0	1930
23	60.2	1950	25.1	1931	43.1	1965	5.4	1940
24	63.8	1981	22.5	1931	46.9	1960	0.0	1931
25	68.6	1960	28.0	1952	46.0	1960	0.8	1931
26	67.5	1949	26.8	1952	45.8	1960	2.1	1952
27	67.2	1949	26.3	1930	39.3	1955	6.0	1952
28	65.7	1932	26.8	1930	39.0	1970	7.0	1976
29	63.3	1932	27.8	1975	41.0	1945	5.2	1931
30	61.0	1932	25.8	1930	42.0	1932	6.1	1931
Mnth	74.7	12/ 1967	14.8	15/ 1955	54.4	4/ 1977	-13.6	16/ 1955

+ Also in earlier years.

TABLE 41

DAILY MAXIMUM AND MINIMUM TEMPERATURE EXTREMES
December 1928 - December 1986
Month: DECEMBER

Day	High Max	Year of Event	Low Max	Year of Event	High Min	Year of Event	Low Min	Year of Event
1	61.0	1973	23.8	1930	39.0	1947	6.3	1931
2	60.8	1939	23.5	1930	40.4	1977	6.0	1934
3	59.0	1939	27.3	1963	49.0	1980	4.9	1931
4	58.4	1980	25.9	1963	47.0	1946	10.0	1971
5	59.9	1946	16.9	1972	42.2	1946	-2.8	1972
6	57.0	1981	23.4	1978	41.0	1946	8.5	1931
7	59.6	1939	19.0	1978	38.0	1983	0.8	1951
8	62.2	1939	18.2	1978	40.7	1950	-3.4	1956
9	62.2	1939	12.7	1972	48.3	1939	-11.0	1972
10	66.1	1939	17.4	1961	51.0	1929	-12.8	1972
11	58.9	1933	11.5	1972	45.0	1929	-12.0	1932
12	59.0	1929	7.9	1932	48.3	1929	-20.0	1932
13	59.6	1929	10.9	1932	45.0	1929	-21.4	1932
14	63.5	1929	15.0	1932	46.3	1977	-19.0	1932
15	58.8	1946	16.8	1932	39.4	1946	-14.7	1972
16	57.8	1939	18.2	1932	40.9	1957	-13.8	1932
17	58.0	1939	18.7	1932	37.0	1939	-4.2	1931
18	50.8	1955	23.4	1964	35.7	1955	1.0	1932
19	53.8	1955	26.2	1930	46.0	1955	-1.0	1931
20	60.6	1981	22.2	1949	40.4	1941	-5.7	1930
21	66.5	1969	20.8	1968	44.2	1964	-4.0	1930
22	57.4	1964	21.0	1968	49.1	1955	-4.6	1930
23	58.7	1933	16.3	1983	51.9	1955	-2.3	1930
24	57.0	1955	21.0	1928	41.0	1971	-3.1	1930
25	59.2	1955	19.8	1948	46.0	1955	-6.7	1930
26	60.0	1933	19.0	1970	43.0	1955	-6.2	1930
27	56.8	1933	22.2	1948	41.0	1934	-4.3	1930
28	57.2	1933	24.2	1939	40.3	1945	-1.7	1930
29	57.6	1933	22.8	1966+	41.4	1933	-4.4	1930
30	51.0	1933	20.0	1978	42.3	1933	-3.8	1930
31	58.3	1942	19.8	1978	39.2	1942	-4.3	1930
Mnth	66.5	21/ 1969	7.9	12/ 1932	51.9	23/ 1955	-21.4	13/ 1932

+ Also in earlier years.

TABLE 5a

#NORMAL AND HIGHEST AND LOWEST DAILY MAXIMA
BY MONTHS WITH DAY AND YEAR OF OCCURRENCE
May 1928 - December 1986

Month	#Normal Daily Maximum	Highest Daily Maximum			Lowest Daily Maximum		
		Temp	Day	Year	Temp	Day	Year
January	37.4	61.5	26	1982	3.6	12	1963
February	43.7	68.5	28	1972	6.0	7	1933
March	51.5	77.9	24	1956	26.2	4	1933
April	61.1	85.4	19	1962	34.9	1	1936
May	72.4	92.9	19	1958	38.7	2	1964
June	83.3	103.5	29	1979+	48.7	11	1947
July	93.2	106.6	26	1960	65.2	5	1982
August	90.0	104.0	4	1979	59.7	22	1968
September	80.0	100.0	8	1979	41.0	24	1934
October	66.7	88.6	3	1963	29.5	29	1971
November	50.2	74.7	12	1969	14.8	15	1955
December	38.9	66.5	21	1969	7.9	12	1932
			July			Jan.	
Annual	64.0	106.6	26	1960	3.6	12	1963

#Climatological Normals (1951 - 1980)
+Also equaled on 21 June 1961

TABLE 5b

#NORMAL AND HIGHEST AND LOWEST DAILY MINIMA
BY MONTHS WITH DAY AND YEAR OF OCCURENCE
May 1928 - December 1986

Month	#Normal Daily Minimum	Lowest Daily Minimum			Highest Daily Minimum		
		Temp	Day	Year	Temp	Day	Year
January	19.7	-21.7	25	1949	47.0	14	1980
February	24.4	-30.0	9	1933	51.3	18	1986
March	29.9	1.8	4	1966	56.0	29	1943
April	37.2	14.2	2	1936	61.2	16	1985
May	45.2	25.4	6	1965	68.7	23	1934
June	53.3	34.8	7	1962+	75.4	26	1981
July	61.8	40.0	1	1968	79.0	10	1956
August	59.7	36.6	31	1965	75.1	7	1983+
September	50.0	27.0	18	1965	73.1	5	1978
October	39.3	16.1	30	1971	65.9	30	1950
November	29.2	-13.6	16	1955	54.4	4	1977
December	21.6	-21.4	13	1932	51.9	23	1955
			Feb.			July	
Annual	39.3	-30.0	9	1933	79.0	10	1956

#Climatological Normals (1951-1980)
+Also occurred in earlier years.

TABLE 6a

NORMAL#; HIGHEST AND LOWEST AVERAGE MAXIMUM TEMPERATURE
BY MONTHS WITH YEAR OF OCCURENCE
May 1928 - December 1986

Month	Normal Monthly Maximum	Highest Average Maximum	Year	Lowest Average Maximum	Year
January	37.4	48.1	1953	21.7	1949
February	43.7	51.8	1934	29.1	1933
March	51.5	62.0	1934	40.5	1952
April	61.1	70.7	1934	53.4	1975
May	72.4	82.4	1934	63.8	1933
June	83.3	92.2	1961	73.0	1945
July	93.2	98.2	1960	87.2	1986
August	90.0	95.7	1967	82.3	1968
September	80.0	87.5	1979	70.8	1965
October	66.7	73.4	1952	56.4	1946
November	50.2	57.2	1949	41.6	1938
December	38.9	48.1	1939	28.1	1930
			7/		1/
Annual	64.0	98.2	1960	21.7	1949

TABLE 6b

NORMAL#; HIGHEST AND LOWEST AVERAGE MINIMA TEMPERATURE
BY MONTHS WITH YEAR OF OCCURENCE
May 1928 - December 1986

Month	Normal Monthly Minimum	Highest Average Minimum	Year	Lowest Average Minimum	Year
January	19.7	36.9	1953	1.4	1949
February	24.4	33.6	1986	3.4	1933
March	29.9	38.2	1978	27.2	1964
April	37.2	43.6	1985	32.5	1970+
May	45.2	51.8	1985	40.6	1930
June	53 3	60.0	1986	47.5	1945
July	61.8	67.2	1985	58.4	1958
August	59.7	66.1	1983	53.2	1928
September	50.0	55.4	1983	43.8	1964
October	39.3	44.8	1983	33.9	1932
November	29.2	35.9	1953	19.3	1930
December	21.6	30.8	1950	6.5	1932
			7/		1/
Annual	39.3	67.2	1985	1.4	1949

+ Also in earlier years.
# Climatological normals (1951 - 1980)

TABLE 7

NORMAL#; HIGHEST AND LOWEST MONTHLY; AND ANNUAL AVERAGE TEMPERATURE
May 1928 - December 1986

Month	Highest Monthly Average Temp.		Lowest Monthly Average Temp.		Month	Highest Monthly Average Temp.		Lowest Monthly Average Temp.	
	Temp	Date	Temp	Date		Temp	Date	Temp	Date
JANUARY	39.5	1953	11.6	1949	JULY	81.2	1960	73.8	1938
Normal#	36.3	1978	13.2	1937	Normal#	80.7	1985	74.2	1986
Monthly	35.7	1938	18.8	1931,1932	Monthly	80.1	1966	74.3	1932,1950
Mean	35.5	1956	19.2	1944	Mean	79.9	1961	74.6	1952
28.6	35.2	1983	19.5	1963	77.5	79.5	1933	74.8	1928
FEBRUARY	42.2	1934	16.2	1933	AUGUST	78.6	1967	69.4	1968
Normal#	41.7	1958	22.6	1939	Normal#	78.4	1982	70.6	1928
Monthly	41.4	1986	22.8	1949	Monthly	78.0	1981	70.9	1965
Mean	40.4	1976	24.0	1929,1955	Mean	77.9	1986+	71.9	1964
34.1	40.3	1957	25.6	1985	74.9	77.8	1958,1961	72.3	1976
MARCH	49.2	1934	32.0	1964	SEPTEMBER	71.4	1979	57.5	1965
Normal#	48.0	1978	33.3	1952	Normal#	69.7	1969	59.0	1970
Monthly	47.7	1986	35.1	1962	Monthly	68.7	1938	59.8	1971
Mean	46.9	1972	35.6	1948	Mean	68.5	1981	59.7	1941
40.7	45.2	1974	35.8	1942	65.0	68.2	1953,1960	60.0	1961
APRIL	56.6	1934	44.2	1970	OCTOBER	57.9	1950	46.6	1946
Normal#	56.0	1930	44.3	1963,1975	Normal#	57.8	1963	47.1	1970
Monthly	55.7	1985	44.4	1929	Monthly	57.5	1952	47.5	1971
Mean	55.6	1943	44.8	1945	Mean	56.7	1979	47.7	1969
49.2	54.6	1947	45.5	1933	53.0	56.4	1947	48.1	1932
MAY	66.7	1934	52.2	1933	NOVEMBER	46.1	1953,1965	31.8	1930
Normal#	65.1	1958	52.9	1953	Normal#	44.3	1949,1981	32.4	1938
Monthly	64.0	1969	53.2	1942	Monthly	44.0	1954	33.0	1931
Mean	63.9	1985	54.3	1950,1975	Mean	43.6	1937	34.3	1952,1956
58.8	63.7	1940	54.7	1965	39.7	43.4	1974	34.5	1957
JUNE	74.7	1961	60.2	1945	DECEMBER	37.9	1977	18.0	1932
Normal#	73.5	1986	63.0	1944	Normal#	37.8	1933	18.8	1930
Monthly	73.4	1974	63.2	1928,1964	Monthly	37.1	1955	22.5	1931
Mean	73.2	1977	63.3	1963	Mean	36.4	1981	22.7	1972
68.3	73.0	1933	63.6	1947	30.3	36.3	1937,1939	24.4	1963

Highest Annual Average		ANNUAL 1929 - 1986	Lowest Annual Average	
Temp	Year		Temp	Year
55.2	1934	Normal#	48.2	1932
54.3	1981	Annual	48.3	1964
53.8	1940	Mean	49.0	1929
53.6	1958	51.7	49.4	1930,1944,1955
53.5	1983		49.6	1942

Climatological Standard Normals (1951 - 1980)
+ Also occurred in earlier years.

TABLE 8

RECORD NUMBER OF DAYS PER YEAR WITH MAXIMUM TEMPERATURES
90, 95, AND 100 DEGREES OR HIGHER
1928 - 1986

90 or Higher(1)		95 or Higher(2)		100 or Higher(3)	
Days	Year	Days	Year	Days	Year
82	1961	51	1961	21	1960
74	1966	50	1940	15	1961+
70	1974	44	1960	12	1979
69	1960+	43	1967	11	1973+
68	1967+	35	1979+	10	1934
67	1940	34	1931	9	1985+
66	1979	33	1969+	8	1978+
63	1978+	31	1934	7	1972+
62	1948	30	1985+	6	1974+
61	1959+	29	1973+	5	1962+
54	Annual Avg	23	Annual Avg	5	Annual Avg

\+ Also in earlier years
(1) - Only years with 61 or more days tabulated
(2) - Only years with 29 or more days tabulated
(3) - Only years with 5 or more days tabulated

TABLE 9

AVERAGE NUMBER OF DAYS PER MONTH WITH MAXIMUM TEMPERATURES
90, 95, AND 100 DEGREES OR HIGHER
May 1928 - September 1986

Month	90 or Higher	95 or Higher	100 or Higher
May	1		
June	8	3	1
July	23	12	3
August	18	7	1
September	4	1	*
Annual Avg	54	23	5

* Average is less than 1/2 day

TABLE 10

GREATEST NUMBER OF CONSECUTIVE DAYS# WITH 90 DEGREES OR HIGHER
DURING THE MONTHS OF JUNE THROUGH SEPTEMBER
June 1928 - September 1986

Days	Period	Year	Days	Period	Year
50	Jul 18 - Sep 5	1967	24	Jul 28 - Aug 24	1963
39	Jul 4 - Aug 11	1966	22	Jul 20 - Aug 10	1942
38	Jul 5 - Aug 11	1961	21	Jul 22 - Aug 11	1978
38	Jun 24 - Jul 31	1960	21	Jul 17 - Aug 6	1974
33	Jul 10 - Aug 11	1969	21	Jul 23 - Aug 12	1972
33	Jul 10 - Aug 11	1964	21	Jul 11 - Jul 31	1959
31	Jul 2 - Aug 1	1968	21	Jul 8 - Jul 28	1956
30	Jul 24 - Aug 22	1971	19	Jun 28 - Jul 16	1985
27	Jul 5 - Jul 31	1935	19	Jul 24 - Aug 11	1979
26	Jul 28 - Aug 22	1940	19	Jun 24 - Jul 12	1979
25	Jul 8 - Aug 1	1933			

Only periods of 19 days or more tabulated

TABLE 11

GREATEST NUMBER OF DAYS# WITH 90 DEGREES OR HIGHER IN ONE MONTH
June 1928 - August 1986

Days	Month	Year	Days	Month	Year
31	August	1967	27	July	1979+
31	July	1960	26	July	1978
30	July	1968+	25	August	1981+
29	July	1966+	25	July	1959+
28	July	1967			

Only periods of 25 days or more tabulated
+ Also in July or August of earlier years

TABLE 12

EARLIEST DATE OF OCCURRENCE IN THE SPRING AND THE LATEST DATE OF
OCCURRENCE IN THE FALL OF 90 DEGREES OR HIGHER
Spring 1928 - Fall 1986

Earliest in the Spring.....May 2, 1947

Latest in the Fall.....September 30, 1957

TABLE 13

GREATEST NUMBER OF CONSECUTIVE DAYS# WITH 95 DEGREES OR HIGHER
DURING THE MONTHS OF JUNE THROUGH SEPTEMBER
June 1928 - September 1986

Days	Period	Year	Days	Period	Year
20	Jul 23 - Aug 11	1978	11	Jul 11 - Jul 21	1933
20	Jul 11 - Jul 30	1960	10	Jul 20 - Jul 29	1945
16	Jul 11 - Jul 26	1967	10	Jul 23 - Aug 1	1943
15	Jul 13 - Jul 27	1931	10	Jun 12 - Jun 21	1940
12	Jun 18 - Jun 29	1961	9	Jul 21 - Jul 29	1980
12	Aug 3 - Aug 14	1960	9	Jul 3 - Jul 11	1976
12	Jul 6 - Jul 17	1954	9	Jul 3 - Jul 11	1973
12	Jul 4 - Jul 15	1940	9	Aug 4 - Aug 12	1972
11	Aug 1 - Aug 11	1985	9	Jul 11 - Jul 19	1934
11	Jul 18 - Jul 28	1937	9	Aug 14 - Aug 22	1932
11	Jul 16 - Jul 26	1936			

Only periods of 9 days or more tabulated

TABLE 14

GREATEST NUMBER OF DAYS# WITH 95 DEGREES OR HIGHER IN ONE MONTH
June 1928 - August 1986

Days	Month	Year	Days	Month	Year
23	July	1960	18	July	1964+
22	August	1967	17	July	1976+
22	July	1961	16	July	1985+
20	July	1978+	16	June	1961
19	July	1967	16	August	1960
18	August	1969+			

Only periods of 16 days or more tabulated
+ Also in July or August of earlier years

TABLE 15

EARLIEST DATE OF OCCURRENCE IN THE SPRING AND THE LATEST DATE OF
OCCURRENCE IN THE FALL OF 95 DEGREES OR HIGHER
Spring 1928 - Fall 1986

Earliest in the Spring.....June 6, 1959

Latest in the Fall.....September 19, 1956

TABLE 16

GREATEST NUMBER OF CONSECUTIVE DAYS# WITH 100 DEGREES OR HIGHER
DURING THE MONTHS OF JUNE THROUGH AUGUST
June 1928 - August 1986

Days	Period	Year	Days	Period	Year
9	Jul 14 - Jul 22	1960	4	Jul 3 - Jul 6	1973
8	Jul 20 - Jul 27	1931	4	Aug 9 - Aug 12	1972
6	Jul 6 - Jul 11	1976	4	Aug 12 - Aug 15	1962
6	Jul 24 - Jul 29	1960	4	Jun 20 - Jun 23	1961
5	Jul 2 - Jul 6	1985	4	Jul 10 - Jul 13	1954
4	Aug 3 - Aug 6	1979	4	Jul 24 - Jul 27	1943
4	Jul 15 - Jul 18	1979	4	Jul 16 - Jul 19	1940
4	Jul 24 - Jul 27	1978	4	Jul 12 - Jul 15	1935
4	Jul 8 - Jul 11	1973			

Only periods of 4 days or more tabulated

TABLE 17

GREATEST NUMBER OF DAYS# WITH 100 DEGREES OR HIGHER IN ONE MONTH
July 1928 - August 1986

Days	Month	Year	Days	Month	Year
15	July	1960	6	July	1985+
12	July	1931	6	August	1960
9	July	1966	5	August	1979
8	July	1976+	5	July	1979+
7	July	1978+			

Only periods of 5 days or more tabulated
+ Also in July or August of earlier years\out 27,33,49\

TABLE 18

EARLIEST DATE OF OCCURRENCE IN THE SPRING AND THE LATEST DATE OF
OCCURRENCE IN THE FALL OF 100 DEGREES OR HIGHER
Spring 1928 - Fall 1986

Earliest in the Spring.....June 7, 1985

Latest in the Fall.....September 8, 1979

TABLE 19

GREATEST NUMBER OF DAYS# IN ONE MONTH WITH A MAXIMUM TEMPERATURE
OF 32 DEGREES OR BELOW
December 1928 - February 1986

Days	Month	Year	Days	Month	Year
26	January	1949+	17	February	1933
25	January	1944	17	January	1929
25	December	1930	16	December	1972+
24	January	1931	16	January	1950
23	January	1973	15	December	1967
22	January	1984+	15	February	1950
21	January	1979+	14	December	1966+
20	December	1985+	14	January	1963
20	January	1942+	13	January	1985
19	January	1947	13	December	1968+
18	January	1964	13	February	1949

+ Also occurred in earlier years.
#Only months with 13 or more days tabulated.

TABLE 20

GREATEST NUMBER OF CONSECUTIVE DAYS# WITH MAXIMUM TEMPERATURE
OF 32 DEGREES OR BELOW
December 1928 - February 1986

Days	Period	Days	Period
18	Jan 23, 1949 - Feb 9, 1949	13	Jan 28, 1984 - Feb 9, 1984
17	Jan 21, 1962 - Feb 6, 1962	13	Dec 5, 1972 - Dec 17, 1972
15	Dec 16, 1985 - Dec 30, 1985	13	Jan 4, 1964 - Jan 16, 1964
15	Jan 20, 1979 - Feb 5, 1979	13	Jan 3, 1944 - Jan 15, 1944
15	Dec 28, 1946 - Jan 11, 1947	13	Dec 19, 1930 - Dec 31, 1930
14	Dec 29, 1972 - Jan 11, 1973		

#Only periods of 13 or more days tabulated.

TABLE 21

AVERAGE NUMBER OF DAYS WITH MAXIMUM TEMPERATURE 32 DEGREES OR BELOW
November 1928 - March 1986

November	1 day	January	10 days	March	1 day
December	7 days	February	4 days	Annual	23 days

TABLE 22

GREATEST NUMBER OF CONSECUTIVE DAYS WITH MINIMUM 32 DEGREES OR LOWER
May 1928 - December 1986
(Only Periods of 50 Days or More Tabulated)

Year	Period	Days
1930-31	Nov 14, 1930 - Feb 15, 1931	94
1932-33	Dec 1, 1932 - Mar 8, 1933	88
1928-29	Nov 15, 1928 - Feb 3, 1929	81
1939	Jan 6, 1928 - Mar 8, 1928	62
1943-44	Dec 21, 1943 - Feb 21, 1944	62
1984-85	Dec 31, 1984 - Mar 1, 1985	61
1963-64	Nov 21, 1963 - Jan 19, 1964	60
1975-76	Dec 28, 1975 - Feb 32, 1976	57
1955	Jan 2, 1955 - Feb 25, 1955	55
1977	Jan 3, 1977 - Feb 21, 1977	50

TABLE 23

AVERAGE NUMBER OF DAYS WITH MINIMUM 32 DEGREES OR LOWER
May 1928 - December 1986

January	-	28 days
February	-	23 days
March	-	19 days
April	-	7 days
May	-	1 day
June	-	0
July	-	0
August	-	0
September	-	Less than 1 day
October	-	5 days
November	-	21 days
December	-	27 days
Annual	-	131 days

TABLE 24

GREATEST NUMBER OF DAYS# IN ONE MONTH WITH A MINIMUM TEMPERATURE
OF 0 DEGREES OR BELOW
December 1928 - February 1986

Days	Month	Year	Days	Month	Year
15	January	1949	7	January	1973
14	January	1937	7	December	1932
12	December	1930	6	January	1974+
11	February	1933	6	December	1931
9	December	1972	6	February	1929
9	January	1932	5	January	1984+
8	January	1942	5	February	1949

#Only months with 5 or more days tabulated.
+Also in earlier years.

TABLE 25

GREATEST NUMBER OF CONSECUTIVE DAYS# WITH A MINIMUM TEMPERATURE
OF 0 DEGREES OR BELOW
December 1928 - February 1986

Days	Period	Days	Period
13	Dec 20, 1930 - Jan 1, 1931	6	Jan 7, 1937 - Jan 12, 1937
8	Dec 9, 1972 - Dec 16, 1972	6	Dec 11, 1932 - Dec 16, 1932
7	Jan 20, 1937 - Jan 26, 1937	5	Jan 17, 1984 - Jan 21, 1984
7	Feb 4, 1933 - Feb 10, 1933	5	Jan 21, 1962 - Jan 28, 1962
6	Jan 3, 1973 - Jan 8, 1973	5	Feb 7, 1929 - Feb 11, 1929
6	Jan 24, 1949 - Jan 29, 1949		

#Only periods of 5 or more days tabulated.

TABLE 26

AVERAGE NUMBER OF DAYS WITH MINIMUM TEMPERATURE 0 DEGREES OR BELOW
November 1928 - February 1986

November	* day	January	2 days	Annual	4 days
December	1 day	February	1 day		

*Less that 1/2 day

TABLE 27

FREEZE DATA SALT LAKE AIRPORT
Fall 1928 - Fall 1986

FREEZE (32 degrees or below)				
Latest date in the Spring	Average Date in the Spring	Earliest Date in the Fall	Latest Date in the Fall	Average Date in the Fall
May 28, 1954		Sep 13, 1928	Nov 13, 1944	
May 25, 1975		Sep 17, 1965	Nov 9, 1985	
May 23, 1966		Sep 18, 1946	Nov 8, 1974	
May 22, 1982		Sep 19, 1942	Nov 5, 1940	
May 19, 1931		Sep 19, 1964	Nov 3, 1940	
May 19, 1939		Sep 22, 1968	Nov 1, 1977	
May 19, 1950	April 30	Sep 24, 1961	Oct 31, 1981	October 13
May 19, 1960		Sep 25, 1958	Oct 30, 1979	
May 16, 1955		Sep 25, 1970	Oct 28, 1939	
May 13, 1943		Sep 27, 1934	Oct 28, 1957	
May 13, 1951		Sep 27, 1936	Oct 28, 1972	
May 13, 1967		Sep 28, 1941	Oct 27, 1931	
May 11, 1930		Sep 28, 1971	Oct 27, 1963	
May 11, 1933			Oct 26, 1973	

*FREEZE-FREE PERIOD				
Longest		Shortest		Average Length
Days	Date	Days	Date	
223	Mar 30 - Nov 9, 1985	124	May 28 - Sep 30, 1954	
195	Apr 26 - Nov 8, 1983	132	May 7 - Sep 17, 1965	
194	Apr 22 - Nov 3, 1940	134	May 19 - Oct 1, 1950	
194	Apr 20 - Nov 1, 1977	136	May 5 - Sep 19, 1964	
193	Apr 17 - Oct 28, 1939	137	May 7 - Sep 22, 1968	
193	May 3 - Nov 13, 1944	139	May 23 - Oct 10, 1966	167 Days
192	Apr 20 - Oct 30, 1979	139	May 1 - Sep 18, 1946	
191	Apr 13 - Oct 22, 1980	139	May 22 - Oct 9, 1982	
190	Apr 28 - Nov 5, 1974	140	May 6 - Sep 24, 1961	
190	Apr 10 - Oct 18, 1976	141	Apr 30 - Sep 19, 1942	
189	Apr 19 - Oct 26, 1973			

*Freeze-free period is the number of days between the last freeze (32 degrees or below) in the spring and the first freeze (32 degrees or below) in the fall.

TABLE 28

GROWING SEASON# DATA SALT LAKE AIRPORT
Fall 1928 - Fall 1986

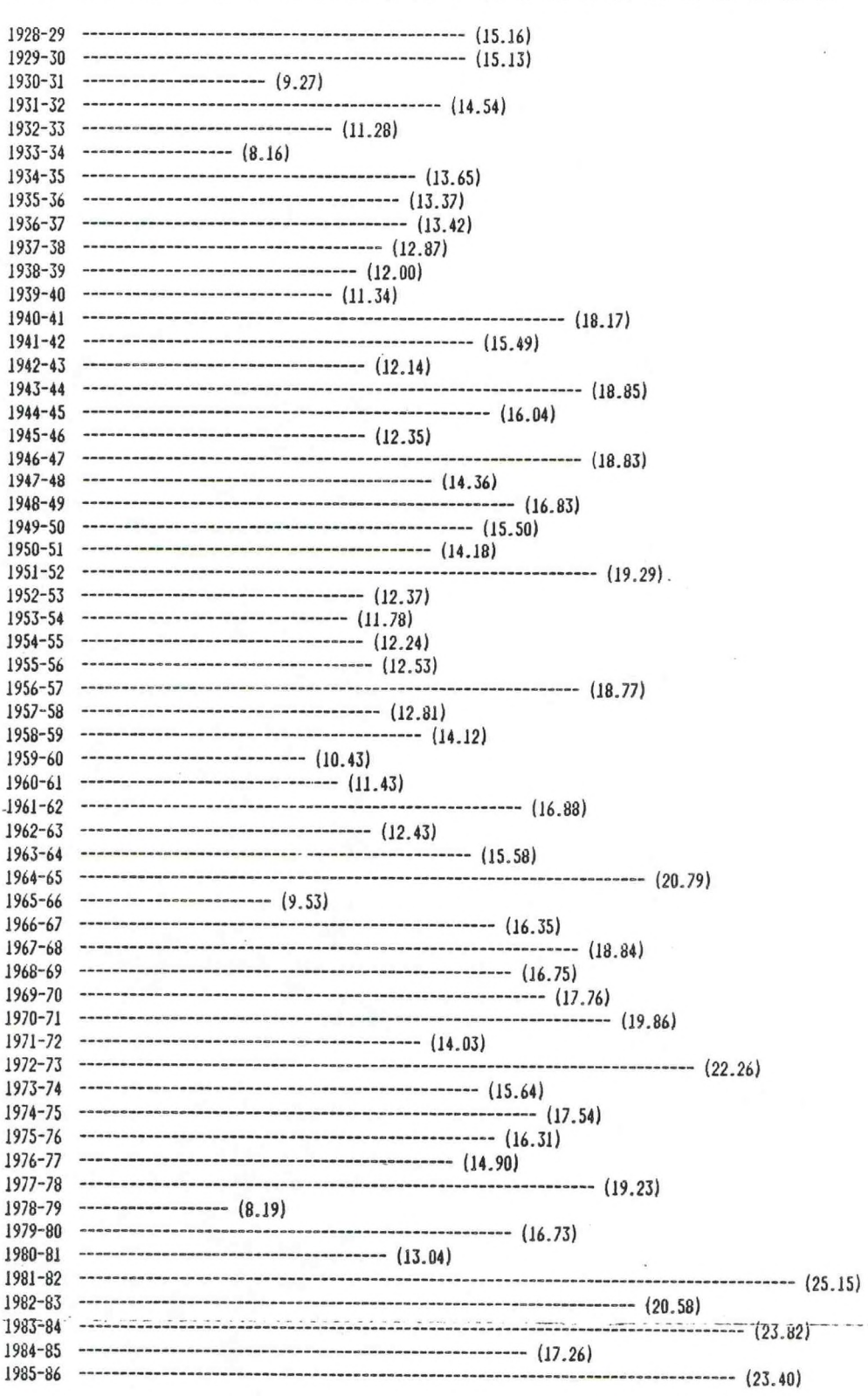
Min Temp Base	Latest in Spring	Spring Avg	First in Fall	Fall Avg
32 or Below	May 28 1954	Apr 30	Sep 13 1928	Oct 13
28 or Below	May 9 1930	Apr 12	Sep 18 1965	Oct 25
24 or Below	Apr 21 1982	Mar 24	Oct 17 1964	Nov 9
20 or Below	Apr 10 1933	Mar 10	Oct 25 1932	Nov 22
16 or Below	Apr 5 1955	Feb 24	Oct 30 1971	Nov 28
10 or Below	Mar 19 1965	Feb 9	Nov 3 1936	Dec 11

Min Temp Base	Minimum Length of Growing Season		Maximum Length of Growing Season		Avg Length
	Period	Days	Period	Days	Days
32 or Below	May 28 - Sep 30 1954	124	1985	223	167
28 or Below	May 9 - Oct 16 1930	159	Mar 9 - Nov 26 1934	261	199
24 or Below	Apr 17 - Oct 29 1960	194	Jan 27 - Nov 26 1934	302	226
20 or Below	Apr 2 - Nov 2 1936	213	Jan 26 - Nov 30 1934	307	254
16 or Below	Apr 2 - Nov 2 1936	213	Dec 21 - Dec 5 1977 - 1978	348	278
10 or Below	Feb 28 - Nov 18 1929	262	Dec 26 - Dec 28 1952 - 1953	366	310

#Growing season is the number of days between the last selected minimum temperature base in the spring and the first selected minimum temperature base in the fall.

FIGURE 5

SALT LAKE CITY AIRPORT SEASONAL PRECIPITATION RECORD
1928-1929 to 1985-1986 (Water Year)#



#Water year extends from October 1 to September 30

TABLE 29

NORMAL#; ANNUAL TOTAL; AND MAXIMUM AND MINIMUM ANNUAL TOTAL BY CALENDAR YEAR
1929 - 1986

Maximum Annual Precipitation					Minimum Annual Precipitation			
Amount	Year	Amount	Year		Amount	Year	Amount	Year
24.26	1983	19.87	1970		8.70	1979	10.34	1935
22.86	1982	19.40	1986	NORMAL	8.99	1966	10.72	1958
21.55	1984	18.79	1941	15.31	9.36	1939	10.90	1963
21.11	1968	18.49	1944		9.52	1931	11.44	1934
20.39	1973	18.44	1957		10.11	1933	11.75	1961

#Climatiological normals (1951 - 1980)

TABLE 30*

THE AVERAGE TIME INTERVAL (RETURN PERIOD) BETWEEN THE OCCURRENCE OF THE LISTED PRECIPITATION AMOUNTS AND THAT OF AN EQUAL OR GREATER AMOUNT
1929 - 1970#

Return Period (Years)	Duration of Precipitation						
	5 Min	10 Min	15 Min	30 Min	1 Hr	2 Hrs	24 Hrs
1	.03	.06	.08	.13	.19	.28	.65
2	.15	.24	.29	.36	.45	.58	1.34
5	.24	.40	.48	.62	.74	.89	1.79
10	.30	.52	.64	.85	1.02	1.17	2.10
50	.43	.81	1.12	1.63	1.93	2.02	2.81
100	.48	.95	1.38	2.09	2.49	2.51	3.13

*This table, for example, states that the average time interval is 100 years before 0.48 inches of rain or more falls at the Salt Lake Airport in a 5 minute period, or 0.95 inches or more in a 10 minute period, or 1.38 inches or more in a 15 minute period, etc. In another example, the table also states that about once in every 10 years it is possible for 0.30 inches or more of precipitation to fall at the Salt Lake Airport in 5 minutes, 0.52 inches or more in 10 minutes, or 0.64 inches or more in 15 minutes, etc.

#This table was compiled using hourly data and Pearsons distribution system by Mr. A.L. Zimmerman, former Hydrologist in Charge of the Colorado Basin River Forecast Center.

PRECIPITATION DATA:

TABLE 31

DAILY NORMALS OF PRECIPITATION 1951 – 1980

	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE	NORM	TO DATE
1	.05	0.05	.04	1.39	.05	2.73	.07	4.47	.06	6.67	.04	8.12	.03	9.08	.02	9.79	.03	10.72	.03	11.61	.04	12.76	.04	13.98
2	.05	0.10	.04	1.43	.05	2.78	.07	4.54	.06	6.73	.04	8.16	.03	9.11	.03	9.82	.03	10.75	.03	11.64	.04	12.80	.04	14.02
3	.04	0.14	.04	1.47	.05	2.83	.07	4.61	.06	6.79	.04	8.20	.03	9.14	.03	9.85	.03	10.78	.03	11.67	.04	12.84	.04	14.06
4	.04	0.18	.04	1.51	.05	2.88	.07	4.68	.06	6.85	.04	8.24	.03	9.17	.03	9.88	.03	10.81	.03	11.70	.04	12.88	.04	14.10
5	.04	0.22	.04	1.55	.05	2.93	.07	4.75	.06	6.91	.04	8.28	.03	9.20	.03	9.91	.03	10.84	.03	11.73	.04	12.92	.04	14.14
6	.04	0.26	.04	1.59	.05	2.98	.07	4.82	.06	6.97	.04	8.32	.02	9.22	.03	9.94	.03	10.87	.03	11.76	.04	12.96	.04	14.18
7	.04	0.30	.04	1.63	.05	3.03	.07	4.89	.06	7.03	.04	8.36	.02	9.24	.03	9.97	.03	10.90	.03	11.79	.04	13.00	.04	14.22
8	.04	0.34	.05	1.68	.05	3.08	.07	4.96	.05	7.08	.03	8.39	.02	9.26	.03	10.00	.03	10.93	.03	11.82	.04	13.04	.04	14.26
9	.04	0.38	.05	1.73	.05	3.13	.08	5.04	.05	7.13	.03	8.42	.02	9.28	.03	10.03	.03	10.96	.03	11.85	.04	13.08	.04	14.30
10	.04	0.42	.05	1.78	.05	3.18	.08	5.12	.05	7.18	.03	8.45	.02	9.30	.03	10.06	.03	10.99	.03	11.88	.04	13.12	.04	14.34
11	.04	0.46	.05	1.83	.05	3.23	.08	5.20	.05	7.23	.03	8.48	.02	9.32	.03	10.09	.02	11.01	.04	11.92	.04	13.16	.04	14.38
12	.04	0.50	.05	1.88	.05	3.28	.08	5.28	.05	7.28	.03	8.51	.02	9.34	.03	10.12	.03	11.04	.04	11.96	.04	13.20	.04	14.42
13	.04	0.54	.05	1.93	.05	3.33	.08	5.36	.05	7.33	.03	8.54	.02	9.36	.03	10.15	.03	11.07	.04	12.00	.04	13.24	.05	14.47
14	.04	0.58	.05	1.98	.05	3.38	.08	5.44	.05	7.38	.03	8.57	.02	9.38	.03	10.18	.03	11.10	.04	12.04	.04	13.28	.05	14.52
15	.04	0.62	.05	2.03	.05	3.43	.08	5.52	.05	7.43	.03	8.60	.02	9.40	.03	10.21	.03	11.13	.04	12.08	.04	13.32	.05	14.57
16	.04	0.66	.05	2.08	.05	3.48	.08	5.60	.05	7.48	.03	8.63	.02	9.42	.03	10.24	.03	11.16	.04	12.12	.04	13.36	.05	14.62
17	.04	0.70	.05	2.13	.05	3.53	.08	5.68	.04	7.52	.03	8.66	.02	9.44	.03	10.27	.03	11.19	.04	12.16	.04	13.40	.05	14.67
18	.04	0.74	.05	2.18	.06	3.59	.08	5.76	.04	7.56	.03	8.69	.02	9.46	.03	10.30	.03	11.22	.04	12.20	.04	13.44	.05	14.72
19	.04	0.78	.05	2.23	.06	3.65	.08	5.84	.04	7.60	.03	8.72	.02	9.48	.03	10.33	.03	11.25	.04	12.24	.04	13.48	.05	14.77
20	.04	0.82	.05	2.28	.06	3.71	.08	5.92	.04	7.64	.03	8.75	.02	9.50	.03	10.36	.03	11.28	.04	12.28	.04	13.52	.05	14.82
21	.04	0.86	.05	2.33	.06	3.77	.07	5.99	.04	7.68	.03	8.78	.02	9.52	.03	10.39	.03	11.31	.04	12.32	.04	13.56	.05	14.87
22	.04	0.90	.05	2.38	.06	3.83	.07	6.06	.04	7.72	.03	8.81	.02	9.54	.03	10.42	.03	11.34	.04	12.36	.04	13.60	.05	14.92
23	.05	0.95	.05	2.43	.06	3.89	.07	6.13	.04	7.76	.03	8.84	.02	9.56	.03	10.45	.03	11.37	.04	12.40	.04	13.64	.05	14.97
24	.05	1.00	.05	2.48	.06	3.95	.07	6.20	.04	7.80	.03	8.87	.02	9.58	.03	10.48	.03	11.40	.04	12.44	.04	13.68	.05	15.02
25	.05	1.05	.05	2.53	.06	4.01	.07	6.27	.04	7.84	.03	8.90	.02	9.60	.03	10.51	.03	11.43	.04	12.48	.04	13.72	.05	15.07
26	.05	1.10	.05	2.58	.06	4.07	.07	6.34	.04	7.88	.03	8.93	.02	9.62	.03	10.54	.03	11.46	.04	12.52	.04	13.76	.04	15.11
27	.05	1.15	.05	2.63	.06	4.13	.07	6.41	.04	7.92	.03	8.96	.03	9.65	.03	10.57	.03	11.49	.04	12.56	.04	13.80	.04	15.15
28	.05	1.20	.05	2.68	.06	4.19	.07	6.48	.04	7.96	.03	8.99	.03	9.68	.03	10.60	.03	11.52	.04	12.60	.04	13.84	.04	15.19
29	.05	1.25			.07	4.26	.07	6.55	.04	8.00	.03	9.02	.03	9.71	.03	10.63	.03	11.55	.04	12.64	.05	13.89	.04	15.23
30	.05	1.30			.07	4.33	.06	6.61	.04	8.04	.03	9.05	.03	9.74	.03	10.66	.03	11.58	.04	12.68	.05	13.94	.04	15.27
31	.05	1.35			.07	4.40			.04	8.08			.03	9.77	.03	10.69			.04	12.72			.04	15.31
MONTHLY NORMALS		1.35		1.33		1.72		2.21		1.47		0.97		0.72		0.92		0.89		1.14		1.22		1.37
WATER YEAR NORMALS*		5.08		6.41		8.13		10.34		11.81		12.78		13.50		14.42		15.31		1.14		2.36		3.73

*Totaled on a 12 month period that begins October 1 and ends September 30.

TABLE 32

NORMAL#; AND MAXIMUM AND MINIMUM MONTHLY PRECIPITATION TOTALS
May 1928 - December 1986

Month	Maximum Monthly Precipitation		Minimum Monthly Precipitation		Month	Maximum Monthly Precipitation		Minimum Monthly Precipitation	
	Amount	Year	Amount	Year		Amount	Year	Amount	Year
JANUARY	3.14	1940	.09	1961	JULY	2.57	1982	T*	1963
Normal#	2.87	1980	.17	1935	Normal#	2.52	1962	.01	1947
Monthly	2.73	1953	.34	1948	Monthly	2.17	1951	.02	1960
Total	2.39	1956	.39	1945	Total	1.92	1945	.04	1944+
1.35	2.33	1978	.41	1966	0.72	1.72	1984	.05	1958
FEBRUARY	3.22	1936	.12	1946	AUGUST	3.66	1968	T*	1944
Normal#	2.84	1969	.27	1931	Normal#	3.28	1945	.03	1985+
Monthly	2.32	1968	.35	1964	Monthly	3.06	1930	.07	1967
Total	2.25	1980	.39	1953	Total	2.94	1932	.10	1975
1.33	2.20	1958	.48	1972	0.92	2.64	1983	.14	1939
MARCH	3.97	1983	.10	1956	SEPTEMBER	7.04	1982	T*	1951+
Normal#	3.67	1944	.14	1965	Normal#	4.07	1973	.02	1952
Monthly	3.56	1952	.20	1955	Monthly	2.80	1970	.03	1974
Total	3.47	1978	.48	1934	Total	2.75	1986	.05	1979
1.72	3.44	1975	.57	1965	0.89	2.51	1978	.06	1932
APRIL	4.90	1944	.45	1934	OCTOBER	3.91	1981	0	1952
Normal#	4.57	1974	.59	1977	Normal#	3.70	1984	T*	1978+
Monthly	4.55	1986	.64	1985	Monthly	3.61	1946	.17	1935
Total	4.43	1984	.65	1954	Total	3.23	1971	.18	1944
2.21	3.86	1963	.85	1936	1.14	2.79	1949	.22	1959
MAY	4.76	1977	T*	1934	NOVEMBER	2.63	1985	.01	1939
Normal#	3.68	1981	.01	1940	Normal#	2.57	1934	.03	1976
Monthly	3.39	1986	.14	1972	Monthly	2.52	1973	.05	1943
Total	3.37	1957	.18	1969	Total	2.30	1945	.10	1959
1.47	3.16	1942	.23	1963	1.22	2.27	1970	.13	1929
JUNE	2.93	1947	.01	1946+	DECEMBER	4.37	1983	.08	1976
Normal#	2.83	1969	.04	1958	Normal#	3.82	1964	.10	1986
Monthly	2.78	1944	.06	1978+	Monthly	3.22	1972	.28	1962
Total	2.73	1967+	.07	1966	Total	2.90	1951	.37	1980
0.97	2.61	1964	.09	1961+	1.37	2.80	1970	.39	1960

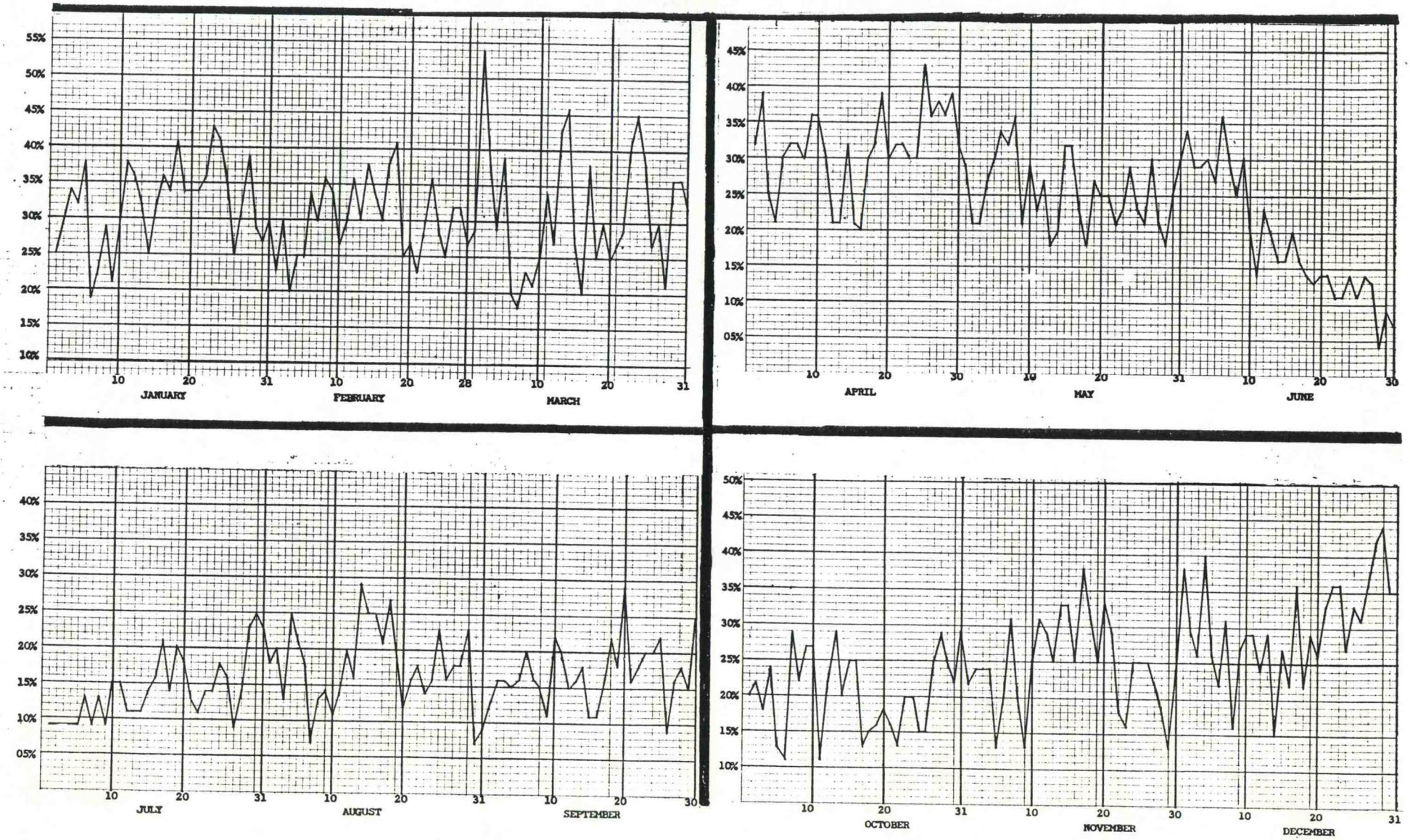
TABLE 33

NORMAL# AND MAXIMUM AND MINIMUM SEASONAL% PRECIPITATION

Maximum Seasonal Precipitation			Minimum Seasonal Precipitation	
Total	Year		Total	Year
25.15	1981-82		8.16	1933-34
23.82	1983-84	NORMAL	8.19	1978-79
23.40	1985-86		9.27	1930-31
22.26	1972-73	15.31	9.53	1965-66
20.79	1964-65		10.43	1959-60
20.58	1982-83		11.28	1932-33
19.86	1970-71		11.34	1939-40

#Normal based on the period 1951-1980. 15.23 based on the period 1928-1986.
%Water year is based on precipitation totaled for a 12 month period that begins October 1 and ends September 30.
+Also occurred in earlier years.
*T is a trace too small to measure

FIGURE 6
RAINFALL CHART
PROBABILITY OF RAIN (BY PERCENTAGE) ON ANY GIVEN DAY, BASED ON SALT LAKE CITY AIRPORT RECORDS WHICH SHOW PRECIPITATION OF .01 INCHES OR MORE FROM JANUARY 1929 - NOVEMBER 1986



PRECIPITATION DATA:

TABLE 34A

MEANS OF PRECIPITATION RECEIVED DURING 1-WEEK PERIODS AND THE PROBABILITY OF RECEIVING SELECTED AMOUNTS OF PRECIPITATION FOR THE SAME WEEKLY PERIOD (1) 1931 - 1960

PERIOD BEGINS	MEAN PCPN	PROB O-T (2)	PROBABILITY (PERCENT) (3) OF RECEIVING AT LEAST THE FOLLOWING AMOUNTS (IN) (4) OF PRECIPITATION								
			0.06	0.10	0.20	0.40	0.60	0.80	1.00	1.40	2.00
Mar 01	.34	20	70	64	51	32	20	13	8	3	1
Mar 08	.40	15	76	70	56	34	21	12	8	3	1
Mar 15	.32	13	78	71	55	31	17	9	5	2	
Mar 22	.29	12	77	70	54	31	17	9	5	2	
Mar 29	.41	12	79	73	59	37	22	14	8	3	
Apr 05	.43	15	76	71	59	38	24	15	9	3	1
Apr 12	.32	18	68	62	50	33	22	15	10	5	2
Apr 19	.43	19	67	61	50	34	24	17	12	6	3
Apr 26	.47	18	70	64	51	34	23	16	11	5	2
May 03	.23	22	64	57	44	28	18	12	8	4	1
May 10	.38	27	59	53	42	27	18	12	8	4	2
May 17	.30	28	60	55	43	28	18	12	8	4	1
May 24	.32	25	61	55	44	29	20	13	9	5	2
May 31	.44	28	58	53	42	29	20	15	11	6	2
Jun 07	.23	40	48	43	33	22	14	10	7	3	1
Jun 14	.13	48	39	34	25	15	9	6	4	2	1
Jun 21	.22	56	33	29	21	13	8	5	4	2	1
Jun 28	.06	63	28	24	16	9	5	3	2	1	
Jul 05	.10	58	28	23	14	6	3	1	1		
Jul 12	.07	53	32	26	17	7	3	2	1		
Jul 19	.14	48	39	33	23	13	7	4	3	1	
Jul 26	.26	38	47	42	32	20	13	8	6	3	1
Aug 02	.28	34	50	44	33	20	13	8	6	3	1
Aug 09	.13	35	48	41	29	15	9	5	3	1	
Aug 16	.21	34	47	40	29	16	9	6	4	2	
Aug 23	.22	38	43	37	28	17	11	7	5	2	1
Aug 30	.16	49	36	31	23	13	8	5	4	2	
Sep 06	.10	53	34	29	20	10	5	3	2	1	
Sep 13	.14	47	40	34	23	11	5	3	1		
Sep 20	.15	44	43	37	26	13	7	4	2	1	
Sep 27	.19	43	45	40	29	17	10	6	4	1	
Oct 04	.24	37	51	45	34	21	13	8	5	2	
Oct 11	.25	36	53	48	36	22	13	8	5	2	
Oct 18	.23	37	54	49	38	23	14	9	5	2	
Oct 25	.31	30	62	57	45	29	18	11	7	3	1
Nov 01	.39	26	68	63	51	33	20	12	7	3	1
Nov 08	.27	26	68	64	42	33	20	13	8	3	1
Nov 15	.46	27	64	58	47	30	19	13	8	4	1
Nov 22	.14	31	57	51	39	24	14	9	5	2	1
Nov 29	.31	29	61	55	42	24	13	7	4	1	
Dec 06	.25	25	63	56	41	22	12	6	3	1	
Dec 13	.18	24	62	55	39	19	9	4	2		
Dec 20	.26	18	73	66	48	24	11	5	2		
Dec 27	.35	15	76	69	52	27	14	7	3	1	
Jan 03	.22	18	71	63	47	25	13	7	4	1	
Jan 10	.31	15	74	66	49	27	14	8	4	1	
Jan 17	.33	13	78	71	55	31	17	9	5	1	
Jan 24	.35	16	77	71	56	32	17	9	4	1	
Jan 31	.28	15	77	70	55	31	17	9	5	1	
Feb 07	.38	9	78	71	54	30	17	9	5	2	
Feb 14	.27	12	74	66	49	28	16	9	5	2	
Feb 21	.31	21	68	61	47	28	17	10	6	2	

PRECIPITATION DATA:

TABLE 34B

PRECIPITATION MEANS AND EXTREMES FOR 2-WEEK PERIODS
(1) 1931 - 1960

PERIOD BEGINS	MEAN PCPN	PROB O-T(2)	PROBABILITY (PERCENT) (3) OF RECEIVING AT LEAST THE FOLLOWING AMOUNTS (IN) (5) OF PRECIPITATION								
			0.06	0.10	0.20	0.40	0.60	1.00	1.40	2.00	4.00
Mar 01	.74	3	92	88	79	60	46	25	14	5	
Mar 15	.61	3	93	89	79	59	43	22	11	4	
Mar 29	.84	2	96	94	86	69	53	28	14	5	
Apr 12	.76	3	91	87	78	61	47	28	17	8	
Apr 26	.70	4	89	84	74	57	44	26	15	7	
May 10	.68	12	61	77	67	51	39	22	13	6	
May 24	.76	8	83	79	69	53	41	24	15	7	1
Jun 07	.37	22	66	60	50	35	25	14	8	3	
Jun 21	.28	36	51	45	35	23	15	7	3	1	
Jul 05	.17	34	49	42	30	15	8	2	1		
Jul 19	.40	18	67	60	48	32	22	11	6	2	
Aug 02	.41	14	71	65	52	36	25	12	6	2	
Aug 16	.43	11	70	63	50	33	23	11	6	2	
Aug 30	.26	23	60	53	40	24	15	7	3	1	
Sep 13	.29	20	67	60	45	26	15	5	2		
Sep 27	.44	21	70	64	53	37	26	13	6	2	
Oct 11	.48	19	75	71	61	44	31	16	8	3	
Oct 25	.70	9	87	85	77	59	44	22	11	3	
Nov 08	.73	9	87	85	77	60	45	24	12	4	
Nov 22	.45	8	83	77	65	45	31	15	7	3	
Dec 06	.43	2	91	84	69	44	28	10	4	1	
Dec 20	.61	3	92	87	75	53	36	16	7	2	
Jan 03	.54	5	91	87	76	54	37	16	7	2	
Jan 17	.68	3	95	94	87	68	47	19	7	2	
Jan 31	.66	1	97	95	87	66	46	18	7	2	
Feb 14	.58	4	92	89	78	58	41	19	9	3	

(1) Based on past weather observations during the 30-year period 1931 to 1960 and extracted from Utah Agricultural Experiment Station Min Mineograph Series No. 500, dated October 1967. Analysis based on a 52-week year; one week of each year started on March 1, February 28 and 29 were excluded.

(2) Probability of receiving zero or at most a trace (less than .01) of precipitation.

(3) Probabilities are based on long-term climatological data, and the probability of a particular amount of precipitation is the same regardless of what happened in any previous year. The strong influence of topography must be considered and limits the representative distance from the Salt Lake Airport to which these probabilities may be applied.

(4) The amounts listed refer to probable totals for a given week and this given total may fall in a few hours as a short-duration storm or it may occur over several days in one or more storm periods.

(5) The amounts listed refer to probable totals for 2-week periods and this given total may fall in a few hours as a short-duration storm or it may occur over several days in one or more storm periods.

TABLE 35a

GREATEST 24-HOUR PRECIPITATION (INCHES)
(Midnight to Midnight)
May 1928 - April 1986

	JANUARY		FEBRUARY		MARCH		APRIL	
DAY	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event
1	.20	1940	.19	1970	.59	1977	.95	1984
2	.75	1940	.89	1936	1.11	1941	1.57	1986
3	.45	1940	.40	1945	.66	1938	.43	1983
4	.27	1978	.44	1976	.63	1938	.67	1947
5	.75	1940	.47	1974	.55	1978	.76	1941
6	.41	1944	.81	1969	.48	1930	.62	1929
7	.32	1974+	.32	1950	.50	1960	.58	1946
8	.56	1975	.65	1959	.59	1986	.94	1949
9	.35	1950	.41	1976	.47	1986	1.19	1974
10	.26	1968	.36	1947	.65	1952	1.54	1974
11	.26	1965	.22	1949	.69	1952	.27	1970
12	.43	1932	.64	1952	.47	1944	.65	1944
13	.28	1971+	.60	1970	1.56	1944	.98	1972
14	1.36	1953	.40	1944	.41	1960+	1.01	1952
15	.39	1956	.55	1936	.92	1963	.51	1969
16	.56	1956	.44	1969	.53	1975	1.12	1941
17	.54	1978	.49	1955	.61	1968	.89	1953
18	.36	1951	.75	1954	.43	1937	1.07	1959
19	.61	1973	.38	1974	.68	1983	.95	1984
20	.56	1962	.45	1930	.69	1946	.90	1932
21	.53	1953	.45	1979	.71	1980	.56	1962
22	.81	1951	.38	1948	.83	1964	1.00	1957
23	.52	1967	.72	1930	.88	1949	1.46	1958
24	.54	1934	.55	1943	.66	1952	.70	1945
25	.46	1959	.90	1969	.68	1975	1.62	1976
26	.44	1969	.51	1981	.55	1981	.69	1962
27	.61	1956	.41	1947	.81	1940	.48	1963
28	.45	1965	.30	1930	.51	1963	.62	1970
29	.49	1980	.16	1940	.73	1967	.71	1967
30	.16	1958			.72	1948	.50	1953
31	.48	1939			.78	1936		
Mnth	1.36	14/ 1953	.90	25/ 1969	1.56	12/ 1944	1.62	25/ 1976

+ Also occurred in earlier years.

TABLE 35b

GREATEST 24-HOUR PRECIPITATION (INCHES)
(Midnight to Midnight)
May 1928 - August 1986

	MAY		JUNE		JULY		AUGUST	
DAY	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event
1	.38	1935	.86	1943	.85	1980	.28	1960
2	.82	1938	.77	1944	.24	1949	1.72	1930
3	.54	1950	.58	1944	.05	1980	1.22	1945
4	.59	1975	.45	1984	.46	1961	1.62	1954
5	1.12	1965	.80	1954	.41	1982	.48	1977
6	.58	1986	.43	1932	.52	1937	.40	1946
7	.57	1933	.94	1964	.25	1984	.16	1979
8	1.03	1986	.94	1968	.27	1980	.94	1968
9	.76	1980	.98	1970	.52	1950	.37	1930
10	1.03	1985	.78	1945	.46	1936	.69	1947
11	1.20	1983	1.36	1947	.29	1930	.26	1959
12	.64	1956	.71	1967	.07	1962+	.50	1930
13	1.03	1957	.43	1976	2.28	1962	.72	1978
14	.69	1977	.31	1955	.18	1959	.85	1968
15	.76	1981	.53	1956	.14	1942	.54	1961
16	1.55	1942	.43	1957	.94	1967	.38	1984
17	.86	1944	.62	1964	.69	1976	.70	1983
18	1.00	1977	.32	1975	.47	1965	.90	1983
19	1.08	1957	.41	1975	.90	1971	1.42	1945
20	1.00	1949	.40	1967	.24	1954	.97	1986
21	.67	1981	1.75	1948	.59	1951	1.05	1965
22	.55	1976	.25	1948	.30	1979	1.04	1960
23	.53	1968	.27	1967	.16	1986	.45	1976
24	.25	1968	1.08	1969	.75	1955	.30	1949
25	1.27	1973	.36	1969	.23	1965	.16	1984
26	.59	1977	.42	1965	.53	1941	1.96	1932
27	.60	1959	.42	1959	.57	1951	.32	1932
28	.78	1935	.39	1959	1.25	1982	.51	1971
29	.63	1946	.22	1971	1.36	1969	.91	1958
30	.80	1937	.11	1940	1.65	1945	.15	1963
31	.56	1947			.75	1952	.32	1963
Mnth	1.55	16/ 1942	1.75	21/ 1948	2.28	13/ 1962	1.96	26/ 1932

+ Also occurred in earlier years.

TABLE 35c

GREATEST 24-HOUR PRECIPITATION (INCHES)
(Midnight to Midnight)
May 1928 - December 1986

	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
DAY	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event	Greatest 24 - Hr Pcpn	Year of Event
1	1.37	1973	.39	1983	.88	1936	.74	1982
2	.20	1973	.47	1976	.48	1938+	.73	1942
3	.73	1929	1.34	1951	.44	1940	.63	1938
4	.33	1940	.44	1939	.45	1940	.63	1948
5	2.19	1970	1.00	1944	.71	1972	.72	1956
6	.81	1965	.64	1977	.55	1953	.40	1951
7	.49	1939	.67	1975	.63	1970	.74	1946
8	.58	1973	.50	1981	.47	1966	.91	1985
9	.64	1986	.46	1960	.31	1935	.98	1970
10	1.15	1982	1.05	1947	.82	1949	.35	1965
11	.86	1985	.57	1984	.66	1985	.79	1968
12	.17	1940	.59	1928	.63	1964	.89	1937
13	.89	1982	.84	1966	.43	1983	.39	1974
14	.66	1977+	.95	1968	.71	1955	.48	1983
15	.23	1959	1.06	1937	.93	1952	.51	1934
16	.31	1965	.94	1938	1.13	1954	.77	1936
17	1.38	1978	.64	1969	.67	1930	.77	1970
18	.82	1947	1.23	1984	1.01	1941	.52	1977
19	.56	1972	.65	1979	.50	1977	.37	1929
20	.57	1984	.67	1949	.41	1941	.45	1967
21	.42	1945	.40	1943	.50	1955	.34	1979+
22	.68	1977+	.32	1970	.78	1974	.46	1951
23	1.09	1973	.52	1972	.57	1946	1.10	1964
24	.41	1930	.64	1956	.44	1951	.53	1964
25	.95	1986	.40	1941	.52	1950	.56	1959
26	2.27	1982	.90	1982	.49	1973	.57	1946
27	.84	1982	.65	1971	.84	1960	.58	1948
28	.96	1982	1.08	1946	.31	1975	1.21	1972
29	.62	1950	.86	1981	.31	1975	.61	1972
30	1.20	1971	.45	1968	.56	1945	.30	1975+
31			.77	1971			.41	1940
Mnth	2.27	26/ 1982	1.34	3/ 1951	1.13	16/ 1954	1.21	28/ 1972

+ Also occurred in earlier years.

TABLE 36

MAXIMUM PRECIPITATION FOR PERIODS OF 5, 10, 15, AND 30 MINUTES; 1, 2, 3, AND 24* HOURS BY MONTHS AND DAY AND YEAR OF OCCURRENCE

MONTH	5 Minutes	10 Minutes	15 Minutes	30 Minutes	1 Hour	2 Hours	3 Hours	24 Hours
JANUARY #1943-86	.06 8/1975 13/1971	.10 13/1971	.12 14/1980 8/1975 13/1971	.22 14/1980	.39 14/1980	.58 14/1980	.78 14/1980	1.36 14/1953
FEBRUARY #1942-86	.13 6/1950	.25 6/1950	.26 6/1950	.28 6/1950	.31 6/1950	.60 6/1969	.64 6/1969	1.05 25-26 1958
MARCH #1941-86	.15 22/1975	.17 22/1975	.18 22/1975	.22 22/1975	.28 7/1960	.47 7/1960	.64 7-8 1960	1.83 13-14 1944
APRIL #1942-86	.11 28/1973	.15 24/1951 30/1936	.20 23/1965	.33 23/1958	.44 25/1976 23/1958	.80 23/1958	.95 23/1958	2.41 22-23 1957
MAY #1936-86 except 1938,40	.30 26/1941	.44 26/1941	.47 26/1941	.48 26/1941	.48 26/1941	.52 10/1946	.71 19/1957	2.03 15-16
JUNE #1936-86 except 1940	.26 24/1936	.32 15/1956	.36 24/1936	.46 24/1936	.48 21/1948 24/1936	.63 21/1948	.75 21/1948	1.88 21-22 1948
JULY #1935-86 except 1936,39,40	.50 13/1962	.92 13/1962	1.26 13/1962	1.79 13/1962	* 1.94 13/1962	1.99 13/1962	1.99 13/1962	2.35 12-13
AUGUST #1935-86 except 1939,40	.34 19/1945	.52 4/1954	.78 4/1954	1.08 4/1954	1.31 4/1954	1.50 4/1954	1.53 4/1954	1.96 26/1932
SEPTEMBER #1935-86 except 1939,40	.35 14/1977	.45 14/1977	.57 14/1977	.62 14/1977	.63 14/1977	.74 26/1982	.97 26/1982	2.30 26-27 1982
OCTOBER #1935-86 except 1938-40	.12 2/1976 7/1975	.17 2/1983 10/1947	.25 10/1947	.39 10/1947	.60 10/1947	.83 10/1947	.95 10/1947	1.76 17-18 1984
NOVEMBER #1935-86 except 1938-40	.10 17/1948	.18 17/1948	.19 17/1948	.21 17/1948	.33 15/1952	.53 15/1952	.59 12/1964	1.13 16/1954
DECEMBER #1936-86 except 1938-41	.08 23/1982 23/1964	.10 23/1982 23/1964	.13 5/1956	.22 5/1956	.30 23/1964	.52 12/1937	.66 12/1937	1.82 28-29 1972
ANNUAL	.50 JULY 13/1962	.92 JULY 13/1962	1.26 JULY 13/1962	1.79 JULY 13/1962	1.94 JULY 13/1962	1.99 JULY 13/1962	1.99 JULY 13/1962	2.41 APRIL 22-23/1957

Period of record. * Not confined to midnight-midnight.

TABLE 37

AVERAGE NUMBER OF DAYS AND MOST NUMBER OF DAYS BY MONTHS WITH 0.01 INCH OR MORE, 0.10 INCH OR MORE, 0.50 INCH OR MORE, AND 1.00 INCH OR MORE PRECIPITATION (MIDNIGHT - MIDNIGHT)
May 1928 - December 1986

Month	0.01 Inch or More			0.10 Inch or More			0.50 Inch or More			1.00 Inch or More		
	Avg. Days	Most Days	Year	Avg. Days	Most Days	Year	Avg. Days	Most Days	Year	Avg. Days	Most Days	Year
JAN	10	16	1978+	4	9	1952+	*	3	1953	*	1	1953
FEB	9	15	1939+	4	10	1940	*	3	1936	0	0	
MAR	10	17	1975+	5	12	1983	1	3	1977+	*	1	1944+
APR	10	16	1978+	5	12	1963+	1	5	1944	*	2	1974+
MAY	8	17	1944	4	10	1981+	1	3	1986+	*	2	1957
JUN	5	17	1967	3	8	1969	*	2	1964+	*	1	1985+
JUL	4	12	1936	2	6	1965	*	3	1951	*	1	1969+
AUG	6	13	1945	2	7	1982	*	3	1971+	*	2	1945
SEP	5	15	1982	2	10	1982	1	5	1982	*	2	1982+
OCT	6	13	1981+	4	12	1981	1	3	1984+	*	1	1984+
NOV	8	17	1948	4	9	1985+	1	3	1955	*	1	1954+
DEC	10	24	1983	5	14	1983	*	3	1964	*	1	1972+
Annual	91	140	1983	43	71	1983	6	12	1977+	1	4	1957+

\+ Also occurred in earlier years
* Average of less than 1/2 day

TABLE 38

GREATEST NUMBER OF CONSECUTIVE DAYS WITH A TRACE* OR MORE
(15 OR MORE DAYS TABULATED)
May 1928 - December 1986

Days	Dates	Total Rainfall
24	Nov 17 - Dec 10, 1983	2.19
18	Jan 28 - Feb 14, 1984	0.34
17	Dec 15 - Dec 31, 1968	1.13
16	Feb 11 - Feb 26, 1936	2.04
16	Apr 17 - May 2, 1951	2.62
16	Feb 8 - Feb 23, 1986	0.80
15	Dec 16 - Dec 30, 1985	0.23
15	Jan 24 - Feb 7, 1979	0.12
15	Feb 5 - Feb 19, 1978	1.56
15	Jan 19 - Feb 2, 1969	1.23
15	Mar 28 - Apr 11, 1958	1.57

TABLE 39

GREATEST NUMBER OF CONSECUTIVE DAYS WITH 0.01 INCH OR MORE
(8 OR MORE DAYS TABULATED)
May 1928 - December 1986

Days	Dates	Total Rainfall
10	Feb 14 - Feb 23, 1980	2.12
9	Dec 19 - Dec 27, 1983	1.78
9	Dec 19 - Dec 27, 1981	1.34
9	May 20 - May 28, 1962	1.56
9	Dec 29 - Jan 6, 1940	2.66
8	Jun 3 - Jun 10, 1984	1.73
8	Sep 26 - Oct 3, 1983	1.47
8	Nov 22 - Nov 29, 1977	0.41
8	Jan 4 - Jan 11, 1975	0.98
8	Oct 24 - Oct 31, 1971	2.10
8	Feb 17 - Feb 24, 1968	0.93
8	Mar 27 - Apr 4, 1958	0.87
8	May 13 - May 21, 1949	2.27
8	Jan 8 - Jan 15, 1949	0.86
8	May 5 - May 12, 1933	1.54

TABLE 40

GREATEST NUMBER OF CONSECUTIVE DAYS WITH 0.10 INCH OR MORE
(5 OR MORE DAYS TABULATED)
May 1928 - December 1986

Days	Dates	Total Rainfall
7	Sep 24 - Sep 30, 1982	4.79
6	May 30 - Jun 3, 1944	2.32
5	May 14 - May 18, 1977	2.76
5	Apr 22 - Apr 26, 1971	1.32
5	Apr 26 - Apr 30, 1970	2.20
5	Jun 3 - Jun 7, 1945	1.64
5	Jun 1 - Jun 5, 1940	0.98
5	May 31 - Jun 4, 1936	1.24

TABLE 41

GREATEST NUMBER OF CONSECUTIVE DAYS WITH 0.25 INCH OR MORE
(4 OR MORE DAYS TABULATED)
May 1928 - December 1986

Days	Dates	Total Rainfall
5	May 14 - May 18, 1977	2.76
5	Jun 3 - Jun 7, 1945	1.64
4	May 6 - May 9, 1986	2.55
4	Apr 27 - Apr 30, 1970	2.05
4	May 21 - May 24, 1968	1.62
4	Nov 18 - Nov 21, 1950	1.18

*A trace means too small to measure.

TABLE 42

GREATEST NUMBER OF CONSECUTIVE DAYS WITHOUT EVEN A TRACE
May 1928 - December 1986

Sep 12, 1952	-	Nov 12, 1952	62 Days
Aug 18, 1944	-	Sep 16, 1944	30 Days
Sep 20, 1978	-	Oct 19, 1978	30 Days
Jun 18, 1944	-	Jul 16, 1944	29 Days
Jan 2, 1961	-	Jan 30, 1961	29 Days
Jun 27, 1931	-	Jul 24, 1931	28 Days
Oct 3, 1933	-	Oct 30, 1933	28 Days
Sep 13, 1942	-	Oct 9, 1942	27 Days
Jun 25, 1963	-	Jul 21, 1963	27 Days
Jul 30, 1985	-	Aug 25, 1985	27 Days
May 2, 1934	-	May 27, 1934	26 Days
Nov 7, 1936	-	Dec 2, 1936	26 Days
Aug 30, 1943	-	Sep 24, 1943	26 Days
Aug 12, 1950	-	Sep 6, 1950	26 Days
Aug 23, 1962	-	Sep 17, 1962	26 Days
Oct 15, 1962	-	Nov 9, 1962	26 Days

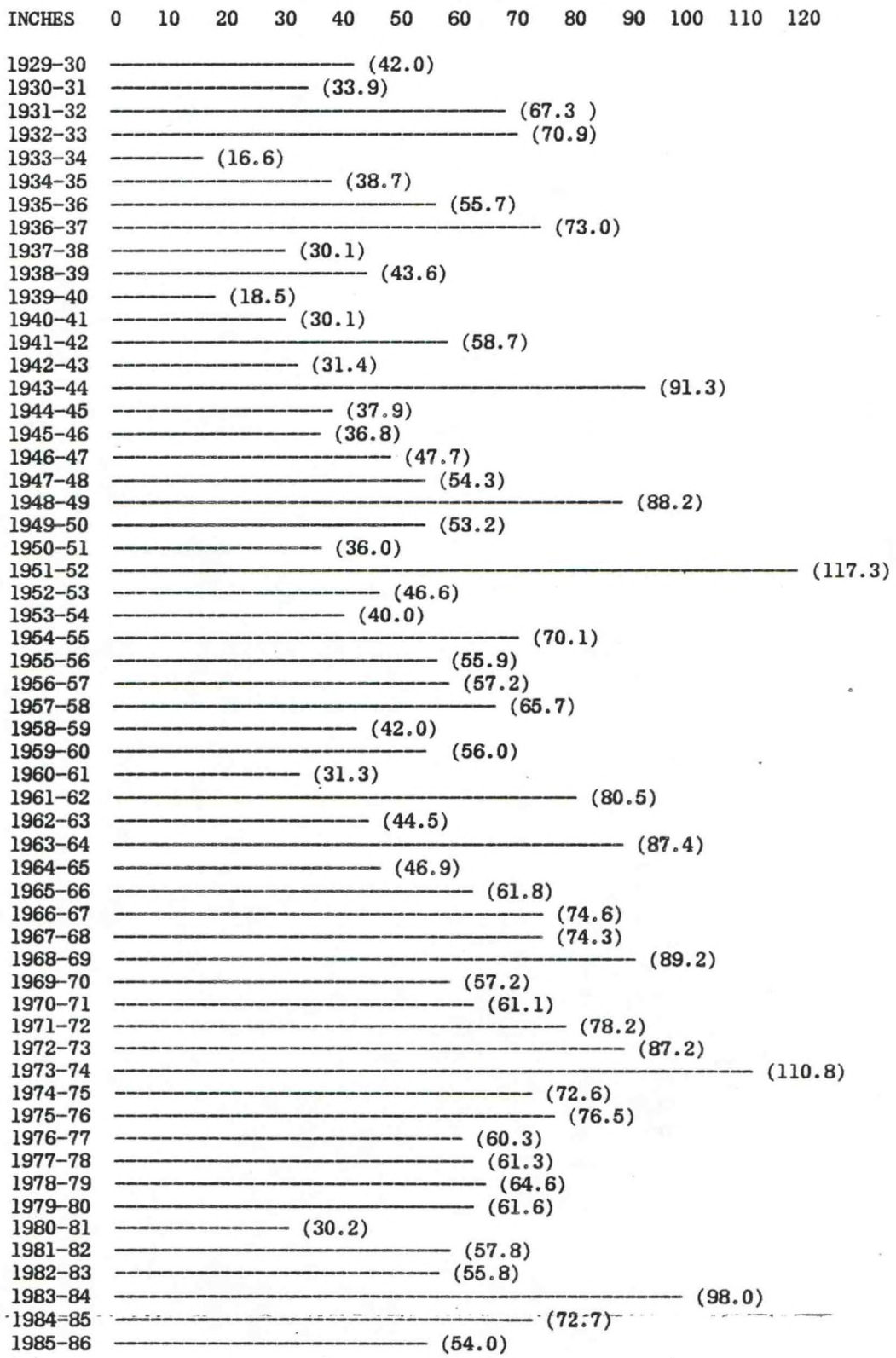
TABLE 43

GREATEST NUMBER OF CONSECUTIVE DAYS WITHOUT MEASURABLE
(LESS THAN .01 INCH) BUT INCLUDING TRACES
May 1928 - December 1986

Sep 11, 1952	-	Nov 12, 1952	63 Days
Jun 25, 1963	-	Aug 24, 1963	61 Days
Jun 2, 1935	-	Jul 26, 1935	56 Days
Jul 21, 1944	-	Sep 17, 1944	56 Days
Sep 14, 1958	-	Nov 4, 1958	52 Days
Jun 14, 1958	-	Jul 28, 1958	45 Days
Oct 28, 1939	-	Dec 10, 1939	44 Days
Jun 3, 1978	-	Aug 14, 1978	42 Days
Sep 20, 1978	-	Oct 31, 1978	42 Days
Aug 30, 1943	-	Oct 6, 1943	38 Days
Aug 7, 1974	-	Sep 13, 1974	38 Days
Sep 22, 1964	-	Oct 28, 1964	37 Days
Aug 21, 1933	-	Sep 23, 1933	36 Days
Aug 5, 1950	-	Sep 8, 1950	35 Days
Dec 27, 1960	-	Jan 30, 1961	35 Days
Aug 21, 1979	-	Sep 24, 1979	35 Days

FIGURE 7

SALT LAKE CITY AIRPORT SEASONAL SNOWFALL RECORD
1929-1930 to 1985-1986 (Season)#



#The snow season extends from 1 July to June 30. The average annual snowfall for this period of record (57 years) is 58.9 inches.

TABLE 44

NORMAL#; AND MAXIMUM AND MINIMUM MONTHLY SNOWFALL(INCHES)
May 1928 - December 1986

Month	Maximum Monthly Snowfall		Minimum Monthly Snowfall		Month	Maximum Monthly Snowfall		Minimum Monthly Snowfall	
	Amount	Year	Amount	Year		Amount	Year	Amount	Year
JANUARY	32.3	1937	0.1	1961	JULY	T*	1950	0.0	Other
Normal#	30.4	1967	2.4	1938	Normal#				Years
Monthly	30.1	1949	2.5	1935	Monthly				
Total	28.1	1933	2.8	1970	Total				
13.7	25.2	1952	3.7	1948	T*				
FEBRUARY	27.9	1969	T*	1953	AUGUST	T*	1949,	0.0	Other
Normal#	20.9	1936	0.3	1957	Normal#		53,54		Years
Monthly	20.1	1944+	0.8	1963+	Monthly				
Total	19.0	1952	0.9	1931	Total				
9.4	18.6	1956	1.0	1983+	T*				
MARCH	41.9	1977	T*	1940+	SEPTEMBER	4.0	1971	0.0	Other
Normal#	35.6	1952	0.4	1959	Normal#	2.2	1965		Years
Monthly	33.5	1964	0.6	1955	Monthly	1.0	1978		
Total	30.8	1944	1.0	1986	Total	T*	1934,		
10.1	25.3	1962	1.1	1965	0.1		46,49,50		
APRIL	26.4	1974	0.0	1941+	OCTOBER	20.4	1984	0.0	1983+
Normal#	25.1	1984	T*	1952+	Normal#	16.6	1971	T*	1985+
Monthly	23.6	1970	0.1	1935	Monthly	10.4	1957		
Total	21.8	1955	0.2	1969	Total	8.3	1961		
5.3	15.5	1958			1.3	6.0	1972		
MAY	7.5	1975	0.0	1985+	NOVEMBER	27.2	1985	0.0	1976+
Normal#	5.3	1965+			Normal#	19.5	1973	T*	1949+
Monthly	5.0	1983			Monthly	18.5	1931	0.4	1953
Total	4.6	1978			Total	18.0	1975		
0.6	2.9	1955			6.5	17.4	1978		
JUNE	T*	1984+	0.0	1985+	DECEMBER	35.2	1972	0.9	1962
Normal#					Normal#	34.3	1948	1.0	1937
Monthly					Monthly	34.2	1983	1.2	1976
Total					Total	33.3	1968	1.7	1986
T*					12.2	27.3	1932	2.1	1942

TABLE 45

NORMAL# ANNUAL TOTAL; AND MAXIMUM AND MINIMUM ANNUAL TOTAL (IN) BY SEASON
1928-1929 through 1985-1986

Maximum Annual Snowfall			Minimum Annual Snowfall	
Amount	Years		Amount	Years
117.3	1951-1952	NORMAL	16.6	1933-1934
110.8	1973-1974	59.2	18.5	1939-1940
98.0	1983-1984		30.1	1937-1938
91.3	1943-1944		30.2	1980-1981
89.2	1968-1969		31.3	1960-1961

#Normals cover the entire period of record. The snowfall season begins July 1 and ends June 30.
+Also occurred in prior years
*T is a trace too small to measure

TABLE 46

GREATEST SNOWFALL (INCLUDING ICE PELLETS) IN ANY 24 HOURS (INCHES AND TENTHS) AND GREATEST DEPTH# OF SNOW ON THE GROUND (INCHES) AND DATES
May 1928 - December 1986

MONTH	GREATEST SNOWFALL IN ANY 24 HOURS			GREATEST DEPTH OF SNOW ON GROUND		
	AMOUNT	DAYS	YEAR	AMOUNT	DAYS	YEAR
JANUARY	10.7	28-29	1980	23	23-24	1949
	9.7	20	1962	17	31	1937
	9.0	6-7	1967	13	7	1967
	8.5	14	1953	12	29-30	1980
FEBRUARY	8.8	10-11	1984	17	1-2	1949
	8.7	14-15	1944	15	1	1937
	8.6	4-5	1974	13	11	1984
	8.5	8	1959	11	3	1936+
MARCH	15.4	13-14	1944	14	2	1977
	13.9	1-2	1966	11	2	1966+
	13.8	10-11	1952	9	10	1962+
	11.8	21-22	1964	8	31	1936
APRIL	16.2	9-10	1974	12	10	1974
	11.1	22-23	1958	10	23	1958
	10.7	25-26	1984+	9	2	1955
	9.7	27-28	1970	8	28	1970
MAY	6.4	4-5	1975	5	2	1964
	5.3	5	1965	4	5	1978
	5.0	11	1983	3	4-5	1975
	4.9	2	1964	2	11	1983+
SEPTEMBER	4.0	30	1971	4	30	1971
	2.2	17	1965	1	17	1965
	1.0	18	1978			
OCTOBER	18.4	17-18	1984	14	18	1984
	8.5	31	1971	8	31	1972
	6.7	31-1	1956	6	24	1956
	6.3	28	1961	4	29	1972
NOVEMBER	11.0	17	1930	11	19	1985
	9.9	14-15	1958	10	15-16	1958
	8.8	18-19	1985	8	15	1955
	7.0	20	1946	7	26-27	1973+
DECEMBER	18.1	28-29	1972	16	28	1948
	13.4	16-17	1970	15	29	1972
	10.7	7-8	1985	14	25	1932
	10.5	27-28	1948	13	25-28	1983+
ANNUAL	18.4	10/17-18	1984	23	1/23-24	1949

+Also in earlier years
#Greatest snow depth in a given snow episode

TABLE 47

EARLIEST AND LATEST DATE AND AMOUNT OF MEASURABLE SNOWFALL (0.1 INCH OR MORE)
AND THE AVERAGE DATE OF THE FIRST MEASURABLE SNOWFALL
May 1928 - December 1986

EARLIEST FALL DATE AND AMOUNT OF SNOWFALL		LATEST FALL DATE AND AMOUNT OF SNOWFALL		AVERAGE DATE OF THE FIRST SNOWFALL	LATEST SPRING DATE AND AMOUNT OF SNOWFALL	
DATE	AMOUNT(IN)	DATE	AMOUNT(IN)		DATE	AMOUNT(IN)
Sep 17, 1965	2.2	Dec 25, 1943*	5.9		May 18, 1960	1.0
Sep 18, 1978	1.0	Dec 25, 1939	0.5		May 15, 1955	2.9
Sep 30, 1971	4.0	Dec 23, 1937	1.0		May 11, 1983	5.0
Oct 13, 1966	3.6	Dec 9, 1949	3.6	NOVEMBER 9	May 11, 1967	1.0
Oct 14, 1969	0.1	Dec 7, 1974+	2.4		May 10, 1953	0.1
Oct 15, 1984	0.2				May 8, 1930	1.0
Oct 20, 1949	1.0				May 5, 1964	0.4
Oct 21, 1961	2.0				May 5, 1937	0.3

TABLE 48

GREATEST NUMBER OF CONSECUTIVE DAYS WITH 1.0 INCH OR MORE OF SNOW ON THE GROUND
May 1928 - December 1986

Days	Period
86	Nov 17, 1930 - Feb 11, 1931
83	Dec 20, 1983 - Mar 11, 1984
82	Dec 9, 1932 - Feb 28, 1933
77	Dec 14, 1948 - Feb 28, 1949
61	Jan 9, 1985 - Mar 10, 1985
54	Dec 28, 1972 - Feb 19, 1973
54	Jan 3, 1955 - Feb 25, 1955
52	Dec 6, 1967 - Jan 26, 1968
51	Dec 20, 1963 - Feb 9, 1964
45	Dec 25, 1943 - Feb 7, 1944

TABLE 49

MAXIMUM SNOWFALL FROM ANY SINGLE STORM#
May 1928 - December 1986

AMOUNT	DURATION	
inches	Began	Ended
21.6	Mar 12, 1944 -	Mar 15, 1944
18.4	5:04 a.m. Oct 17, 1984 -	10:35 a.m. Oct 18, 1984
18.1	1:03 p.m. Dec 28, 1972 -	1:30 p.m. Dec 29, 1972
17.4	5:43 a.m. Mar 1, 1977 -	3:35 a.m. Mar 3, 1977
17.4	6:02 p.m. Apr 9, 1974 -	8:20 p.m. Apr 10, 1974

#Storm total not limited to 24 hours.
*This date is for the airport location. The latest fall snowfall to occur in the Salt Lake area was during the winter of 1890-91 when the first measurable snow came on Jan 2, 1891 (0.3 inches)
+Also occurred on this date in earlier years.

TABLE 50

AVERAGE NUMBER AND MAXIMUM NUMBER OF DAYS WITH SNOWFALL (0.1 INCH OR MORE)
BY MONTHS AND YEAR OF OCCURRENCE
May 1928 - December 1986

Month	Maximum Number of Days With Snowfall		Minimum Number of Days With Snowfall		Month	Maximum Number of Days With Snowfall		Minimum Number of Days With Snowfall	
	Days	Year	Days	Year		Days	Year	Days	Year
September	1	1978+	0	1985+	January	17	1979	1	1961
						16	1937	2	1953+
Average					Average	15	1949	3	1940+
*					9	14	1932		
October	6	1971	0	1985+	February	15	1939	0	1953
	4	1984				12	1960+	1	1973+
Average	2	1981			Average	11	1985		
*					6	10	1984		
November	11	1985	0	1976+	March	17	1977	0	1940+
	10	1975+	1	1967+		15	1964	1	1959+
Average	9	1964			Average	13	1952		
4	8	1978+			5	12	1944		
	7	1983+				11	1938		
December	21	1983	1	1962+	April	11	1970	0	1954+
	15	1951+	2	1979+		8	1984		
Average	14	1970+			Average	7	1974+		
7	13	1973+			3	6	1967		
	12	1969+							
					May	3	1975	0	1984+
						2	1978+		
					Average	1	1971+		
					*				

TABLE 51

AVERAGE AND MAXIMUM AND MINIMUM NUMBER OF DAYS WITH
SNOWFALL (0.1 INCH OR MORE) BY SEASON#
1928-1929 through 1985-1986

Maximum Number of Days		Average Number of Days	Minimum Number of Days	
Days	Season		Days	Season
63	1983-1984		9	1939-1940
52	1973-1974		11	1933-1934
51	1963-1964	34	18	1946-1947
50	1978-1979+		21	1958-1959
48	1984-1985+		22	1962-1963+
45	1975-1976		23	1952-1953

\+ Also occurred in earlier years or seasons
* The average frequency is less than 1/2 day
\# The snowfall season begins July 1 and ends 30 June.

TABLE 52

AVERAGE AND MAXIMUM NUMBER OF DAYS WITH SNOWFALL (INCLUDING ICE PELLETS) OF 1 INCH OR MORE AND 3 INCHES OR MORE BY MONTHS AND YEAR OF OCCURRENCE

Month	Snowfall 1 inch or more May 1928 - Dec 1986			Snowfall 3 inches or more Jan 1951 - Dec 1986		
	Avg Days	Maximum Number Days	Year	Avg Days	Maximum Number Days	Year
September	*	1	1978+	*	1	1971
October	*	3	1984	*	2	1984+
		2	1981+		1	1972+
		1	1973+			
November	2	8	1985	1	5	1985
		7	1931		3	1978+
		6	1975+		2	1961+
December	4	15	1983	2	5	1972+
		9	1932		4	1982+
		8	1972+		3	1970+
January	4	9	1949+	2	5	1967+
		7	1967+		4	1965
		6	1982+		3	1980+
February	3	8	1939	1	4	1969
		7	1976		2	1978+
		6	1979+		1	1985+
March	3	10	1964	1	5	1977
		9	1977+		4	1952
		8	1962		3	1980+
April	1	6	1974	1	4	1984+
		5	1984+		3	1974+
		4	1967+		2	1975+
May	*	3	1975	*	1	1983+
		1	1983+			
Seasonal#	18	32	1983-84+	8	15	1951-52
		27	1975-76		14	1973-74
		26	1963-64+		12	1968-69+
		25	1932-33		10	1971-72+

* Average less than 1/2 day
\+ Also occurred in earlier years
\# Snowfall season extends from July 1 through June 30

TABLE 53

AVERAGE NUMBER AND GREATEST NUMBER OF DAYS
WITH THUNDERSTORMS AND HAIL
May 1928 - December 1986

Month	Thunderstorms			Hail		
	Average Days	Greatest Number Days	Year	Average Days	Greatest Number Days	Year
January	*	2	1982+	*	2	1969+
February	1	4	1936	*	2	1950
March	1	5	1958	*	2	1961
April	2	7	1930	1	3	1973+
May	5	13	1980	1	3	1980+
June	5	19	1967	1	4	1944
July	7	14	1985+	*	2	1969
August	8	16	1952+	*	2	1976+
September	4	10	1937	*	2	1973
October	2	6	1983+	*	2	1945
November	*	3	1971+	*	1	1983+
December	*	3	1964	*	3	1964
Annual	36	57	1983+	4	13	1945

* Monthly average is less than 1/2 day
+ Also occurred in earlier years

TABLE 54

AVERAGE RELATIVE HUMIDITY* BY TIME PERIODS
January 1951 - December 1986

Month	5 a.m. MST	11 a.m. MST	5 p.m. MST	11 p.m. MST
January	78	70	68	77
February	77	63	58	76
March	71	52	46	68
April	67	44	39	62
May	66	39	33	58
June	60	31	26	50
July	51	26	21	42
August	55	29	23	45
September	61	35	28	54
October	69	43	41	66
November	74	57	58	73
December	78	70	71	78
Annual	67	47	43	62

*Relative humidity is the ratio, expressed as a percentage, of the actual vapor pressure of the air to the saturated vapor pressure.

Vapor pressure is the pressure exerted by the molecules of a give vapor. In meteorology this pressure is used almost exclusively to denote the partial pressure of water vapor in the atmosphere.

In simple terms, Relative Humidity is a measure, in percent, of the amount of moisture in the air with 100 percent denoting a saturated air mass.

TABLE 55

AVERAGE PERCENT OF POSSIBLE SUNSHINE, AVERAGE AMOUNT OF SKY COVER (TENTHS), AVERAGE NUMBER OF DAYS OF CLEAR, PARTLY CLOUDY, AND CLOUDY, AND AVERAGE NUMBER OF HEAVY FOG DAYS (VISIBILITY REDUCED TO 1/4 MILE OR LESS) BY MONTHS. ALSO, GREATEST NUMBER OF HEAVY FOG DAYS BY MONTHS AND YEAR OF OCCURRENCE.
Period of Record#

Month	Sunshine	Sky Cover (Sunrise-Sunset)				Heavy Fog		
	Avg. Pct of Possible	Avg Amt of Sky Cover	Average Number of Days			Average Number of Days	Greatest Number of Days	
			Clear	Partly Cloudy	Cloudy		Days	Year
January	46	7.3	6	6	19	4	21	1931
February	55	7.1	5	7	16	2	13	1985
March	64	6.7	7	8	16	*	5	1984
April	67	6.4	7	9	14	*	2	1958
May	72	5.7	9	11	11	*	2	1964
June	79	4.3	14	10	6	0		
July	84	3.5	17	10	4	0		
August	83	3.7	16	10	5	0		
September	83	3.6	17	8	5	0		
October	72	4.6	14	8	9	*	1	1971+
November	54	6.2	9	7	14	1	4	1968+
December	43	7.2	6	7	18	4	14	1980
ANNUAL	69	5.5	127	103	137	11	37	1931

 # Period of Record:
Average percent of possible sunshine..
January through June: 1936-1939; 1942-1986;....48 years.
July through November: 1935-1938; 1942-1986;...48 years.
December: 1935-1938; 1941-1986;.....50 years.
Average amount of sky cover (sunrise to sunset): 1936-1986..51 years
Average number of days of clear, partly cloudy, and cloudy and average number of days with heavy fog: 1929-1986.....58 years.
Greatest number of days with heavy fog: 1928-1986..59 years.

Sky cover is expressed in a range from 0 (for no clouds) to 10 (for sky completely covered by clouds). Clear ranges from 0/10 to 3/10 sky cover; partly cloudy from 4/10 to 7/10 sky cover; and cloudy from 8/10 to 10/10 sky cover.

*** Less than 1/2 day**
+ Also occurred in earlier years
Total sunshine available at Salt Lake City is 267,341 minutes.

TABLE 56a

AVERAGE, MAXIMUM, AND MINIMUM NUMBER OF DAYS BY MONTHS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY DAYS

JANUARY - JUNE

May 1928 - June 1986

Month	Average Number of Clear Days	Maximum Number of Clear Days		Minimum Number of Clear Days		Average Number of Partly Cloudy Days	Maximum Number of Partly Cloudy Days		Minimum Number of Partly Cloudy Days		Average Number of Cloudy Days	Maximum Number of Cloudy Days		Minimum Number of Cloudy Days	
		Days	Year	Days	Year		Days	Year	Days	Year		Days	Year	Days	Year
		13	1961+	0	1950		17	1930	1	1981+		29	1967	8	1930
January	6	12	1968	1	1967+	6	13	1939	2	1978+	19	28	1981	10	1961
		10	1948+	2	1981+		11	1975	3	1986+		26	1950	11	1935
		12	1964+	0	1979		15	1930	3	1962		26	1979	7	1935
February	5	10	1955+	2	1983+	7	12	1935	4	1961+	16	25	1962	9	1930
		9	1924				10	1975+	5	1986+		21	1983	10	1964
		12	1968+	1	1949		15	1961+	2	1960		24	1983+	7	1956+
March	7	11	1965	2	1984+	9	13	1972+	3	1971+	15	23	1949	8	1939+
		10	1985+	3	1983+		12	1950	4	1983+		20	1983+	11	1972+
		15	1934	2	1967		19	1942	2	1951		20	1965+	6	1939+
April	7	12	1977+	3	1978	9	16	1938	4	1963	14	19	1983+	7	1931
		11	1933+	4	1981+		15	1932	5	1983+		18	1978+	9	1985+
		19	1929	1	1962		18	1941+	5	1974		20	1977	2	1928
May	9	18	1936	3	1980+	11	17	1960	6	1978+	11	19	1980	4	1939+
		17	1931	4	1981		16	1932	7	1984+		18	1981+	6	1969
		22	1935	4	1969		21	1930	3	1938		17	1964	0	1935+
June	14	21	1929	7	1964+	10	15	1982+	5	1986+	6	12	1969+	2	1958+
		20	1974+	8	1967		14	1969	6	1968+		11	1948+		

Clear is defined as 0/10 to 3/10 sky cover, Partly Cloudy as 4/10 to 7/10 sky cover, and Cloudy as 8/10 to 10/10 sky cover.
+ Also occurred in earlier years

TABLE 56b

AVERAGE, MAXIMUM, AND MINIMUM NUMBER OF DAYS BY MONTHS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY DAYS JULY - DECEMBER

May 1928 - December 1986

Month	Average Number of Clear Days	Maximum Number of Clear Days		Minimum Number of Clear Days		Average Number of Partly Cloudy Days	Maximum Number of Partly Cloudy Days		Minimum Number of Partly Cloudy Days		Average Number of Cloudy Days	Maximum Number of Cloudy Days		Minimum Number of Cloudy Days	
		Days	Year	Days	Year		Days	Year	Days	Year		Days	Year	Days	Year
		25	1978	9	1985+		19	1960	3	1955		9	1985+	0	1956+
July	17	24	1955+	10	1966+	10	17	1966+	4	1978+	4	7	1986+	1	1969+
		23	1942+	11	1937		16	1984	5	1962					
		26	1944	3	1930		19	1982	4	1933+		13	1930	0	1985+
August	16	25	1933+	4	1929	11	18	1929	5	1978+	4	11	1968	1	1974+
		23	1948	6	1982		17	1945+	6	1973+		10	1957	2	1980+
		27	1933	3	1940		17	1940	2	1933		15	1959	0	1962
September	17	26	1962+	7	1986	8	15	1976	3	1979+	5	14	1982	1	1974+
		25	1979+	8	1982		14	1978	4	1975+		13	1961		
		24	1952	5	1957		13	1963+	2	1942		16	1972	1	1929
October	14	23	1933	7	1972	8	12	1934	3	1973+	9	15	1981+	2	1952
		21	1954	8	1982+		11	1957+	4	1985+		14	1971+	3	1965+
		22	1936	2	1983+		13	1932	2	1944		24	1970	3	1929
November	9	19	1939+	3	1985+	7	12	1967	3	1970	14	23	1972	4	1936
				4	1984+		11	1969+	4	1979+		22	1983	5	1954+
		15	1960	0	1950		13	1939	1	1985+		29	1983	9	1939
December	6	14	1959	1	1983+	7	12	1940+	3	1963+	18	28	1950	10	1960
		13	1956+				11	1970	4	1982+		27	1985	11	1953+
		188	1933	88	1967		163	1930	70	1979		182	1983	87	1933
ANNUAL	127	162	1929	89	1981	103	134	1941	78	1964	135	172	1981	91	1939
		156	1952	94	1982		117	1967	83	1978+		163	1978+	96	1929

Clear is defined as 0/10 to 3/10 sky cover, Partly Cloudy as 4/10 to 7/10 sky cover, and Cloudy as 8/10 to 10/10 sky cover.

\+ Also occurred in earlier years

TABLE 57

AVERAGE SPEED, PREVAILING DIRECTION, FASTEST MILE, AND PEAK GUST BY MONTHS, DAY, AND YEAR OF OCCURENCE

MONTH	*Feb 1930 - Nov 1986		*Jul 1935 - Nov 1986				*Aug 1954 - Nov 1986			
	Average Speed MPH	Prevailing Direction (1)	Fastest Mile (2) Speed MPH	Dir	Day	Year	Peak Gust (3) Speed MPH	Dir	Day	Year
January	7.7	SSE	59(3)	NW	10	1980	69(3)	NW	10	1980
February	8.2	SE	56(3)	SE	18	1954	54(3)	W	8	1978
March	9.3	SSE	71(3)	NW	10	1954	62(3)	S	2	1974
April	9.5	SE	57	NW	11	1964	69	W	22	1961
May	9.4	SE	57	NW	21	1953	62(3)	NW	5	1968
June	9.4	SSE	63	W	3	1963	94	NW	3	1963
July	9.5	SSE	51	NW	25	1986	74	NW	18	1981
August	9.6	SSE	58	SW	6	1946	74	NW	13	1978
September	9.1	SE	61(3)	W	3	1952	71(3)	NW	5	1972
October	8.5	SE	67(3)	NW	27	1950	71(3)	NW	5	1967
November	7.8	SSE	63(3)	NW	11	1937	59(3)	NW	4	1968
December	7.5	SSE	54	S	25	1955	60	N	15	1981
ANNUAL	8.8	SSE	71(3)	NW	10 Mar	1954	94	NW	3 Jun	1963

* Period of record.

(1) The prevailing direction is the most frequent observed direction from which the wind blows during a specific time period. In the above table, the prevailing direction is for the majority of months during the period of record.

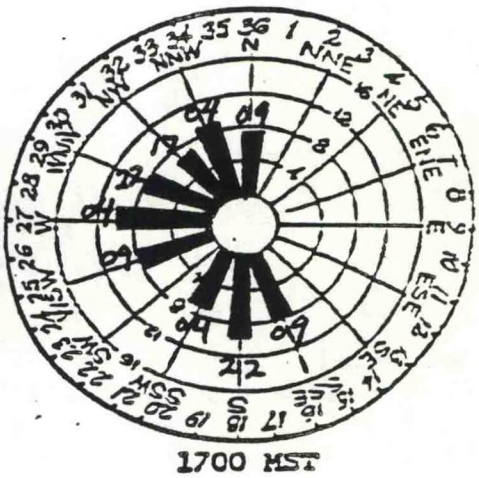
(2) Fastest mile is the fastest one minute observed wind speed taken from a multiple register with a time record of the passing of each mile of wind.

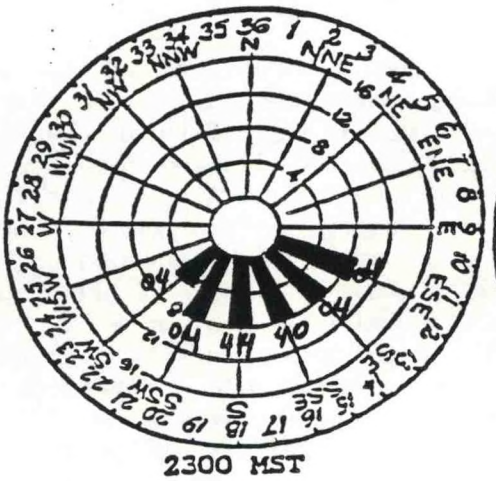
(3) Wind gusts are reported when rapid fluctuations in wind speed result in a variation of 10 kts (11 mph) or more between peaks and lulls. The duration of each gust is usually less than 20 seconds. An official record of the measurement of peak wind gusts requires the use of an instantaneous wind-speed recorder. This type of instrument was not available for use at the Salt Lake Airport until August 15, 1954. It is very important to remember this when using the peak gust speed records. For example, the record fastest mile in March was 71 mph recorded on March 10, 1954 (period of record July 1935 - July 1986). However, the peak gust speed of record for March (period of record August 1954 - Jul 1986) was only 62 mph recorded on March 2, 1974. This 62 mph value would not, of course, equal the peak wind gust that obviously occurred on March 10, 1954, but was not made a matter of record because an instantaneous wind-speed recorder was not available at the time. A formula to derive an unofficial estimate of peak gust from the fastest mile, per American Standard Association (ASA) is to multiply the fastest mile of wind by a factor of 1.3. However, the derived value would still be strictly an approximate speed and of no official use.

Figure 8

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: January

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.





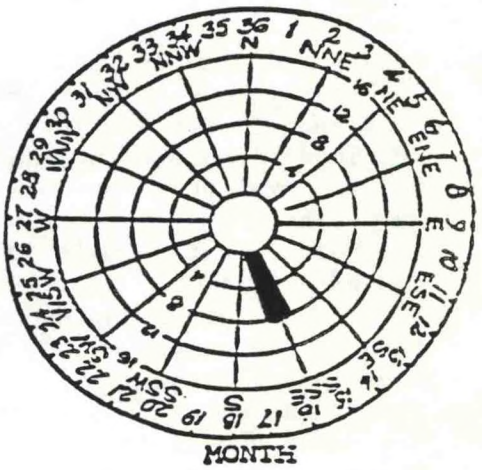
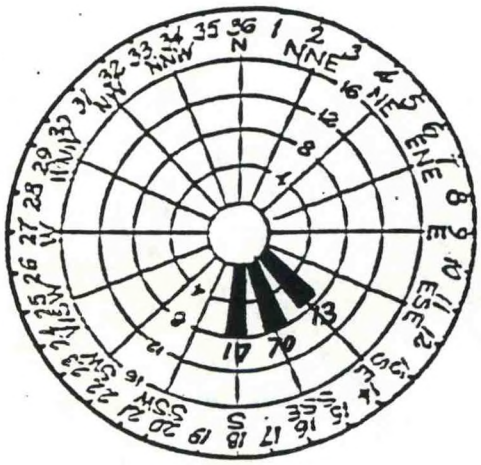


Figure 9

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY

1961 - 1986 MONTH: February

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.

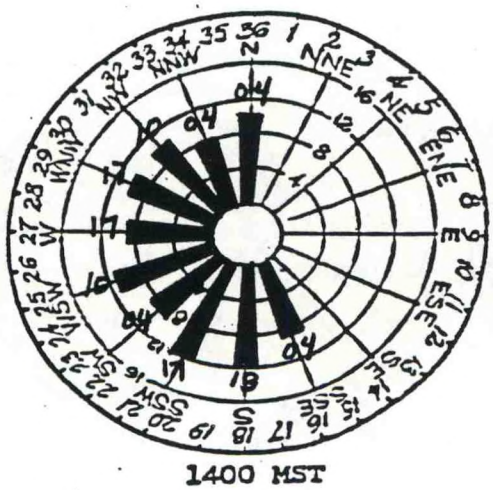


0200 MST

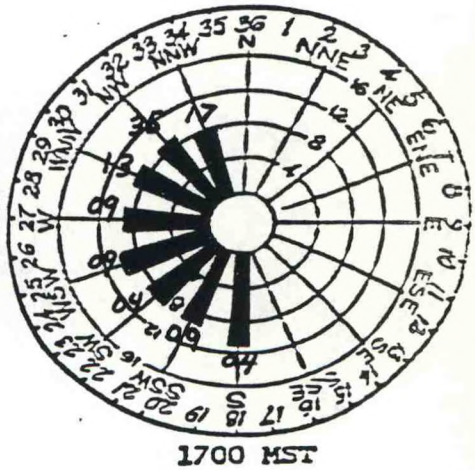
0500 MST

0800 MST

1100 MST

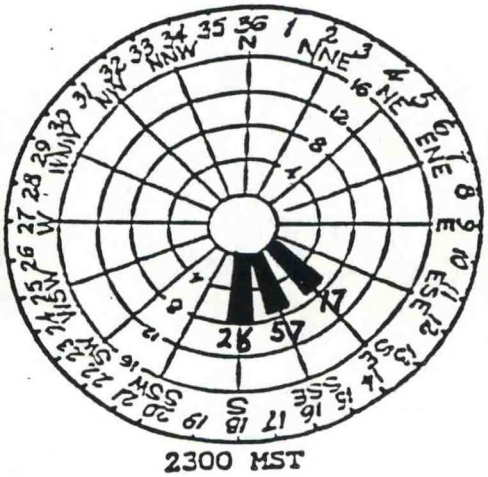


1400 MST

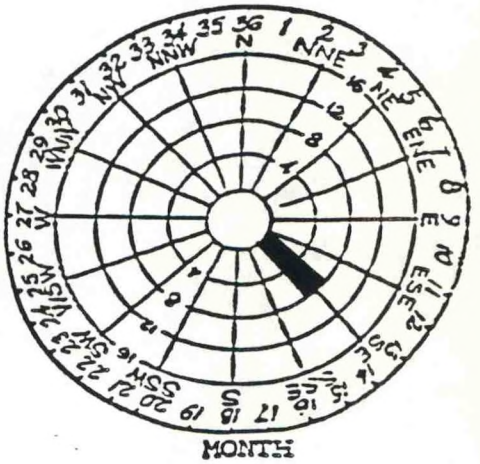


1700 MST

2000 MST



2300 MST



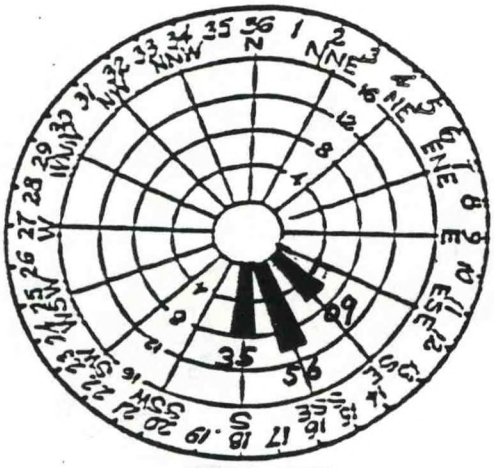
MONTH

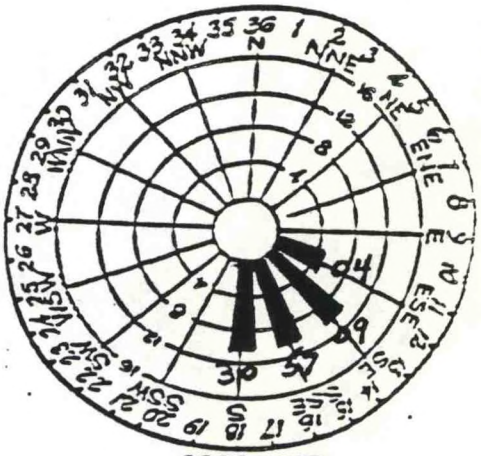
Figure 10

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: March

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.

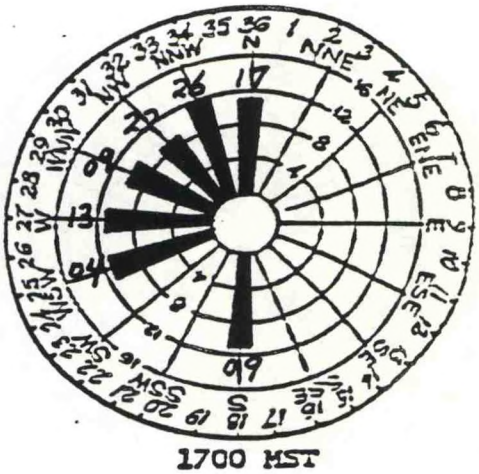

0200 MST


0500 MST

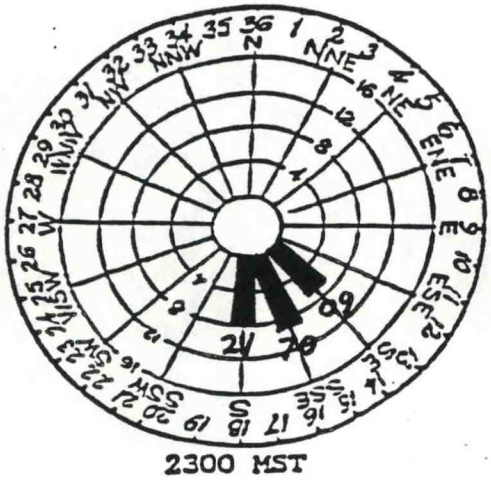

0800 MST


1100 MST


1400 MST


1700 MST


2000 MST


2300 MST

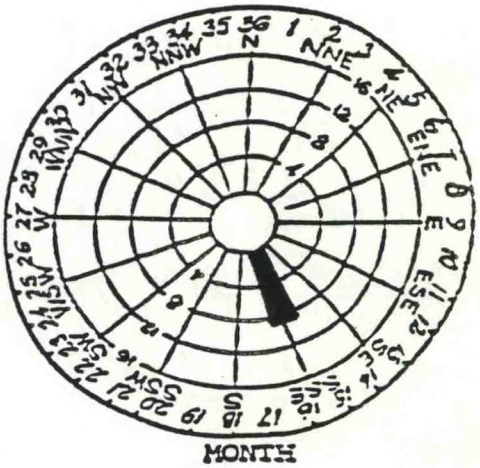
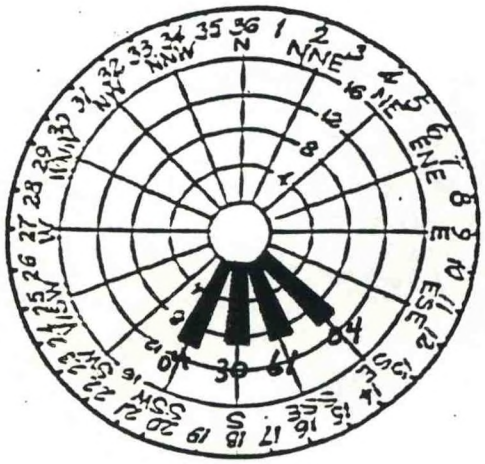
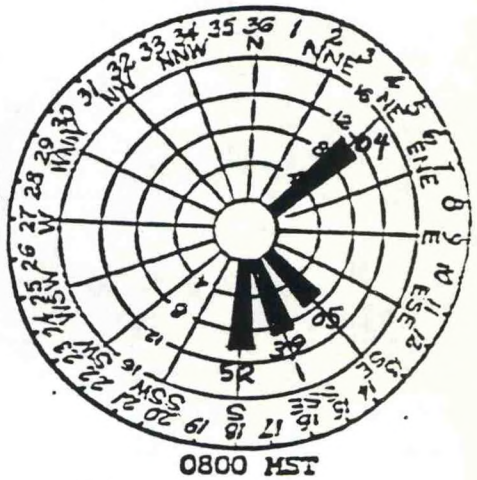

MONTH

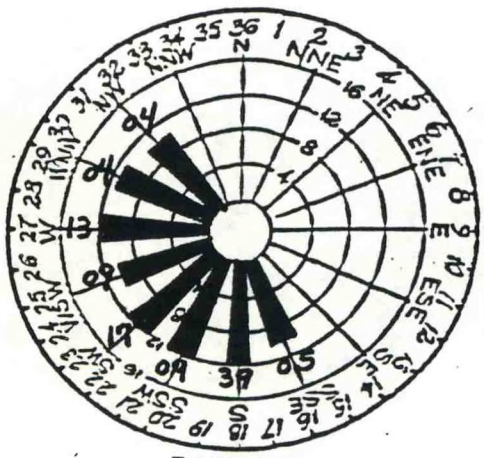
Figure 11

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: April

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.







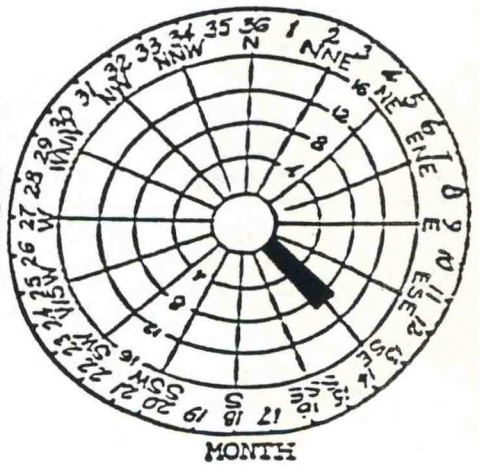
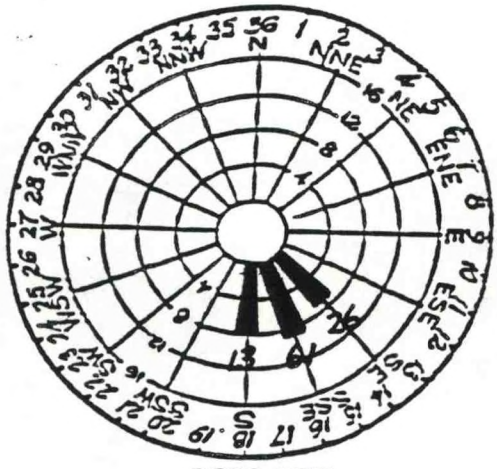
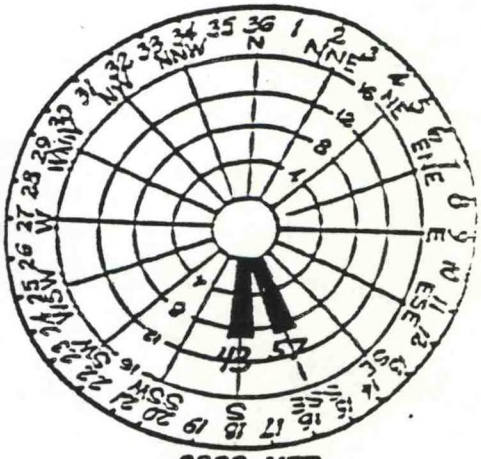


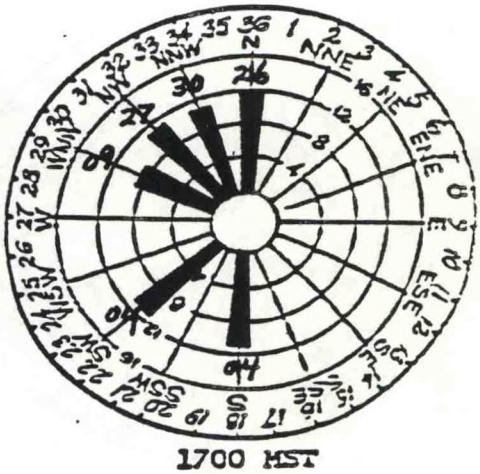
Figure 12

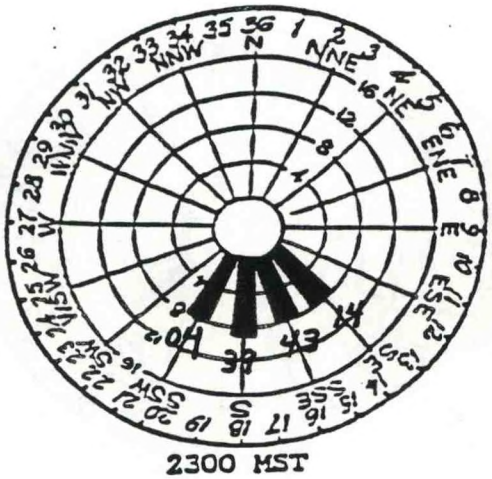
WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: May

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.









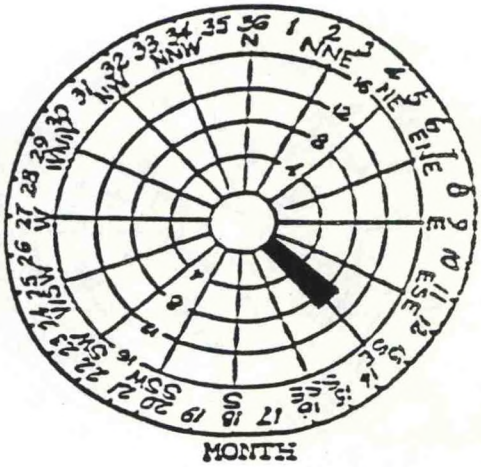
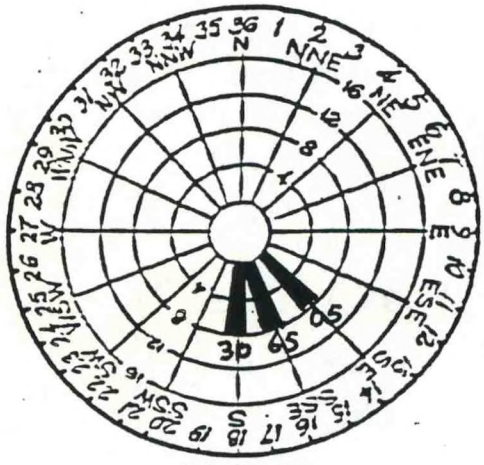


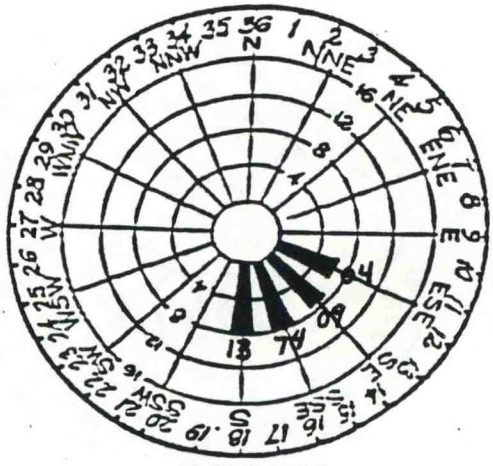
Figure 13

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: June

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.



0200 MST

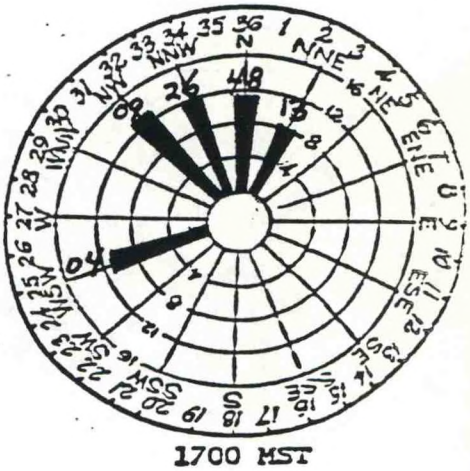


0500 MST

0800 MST

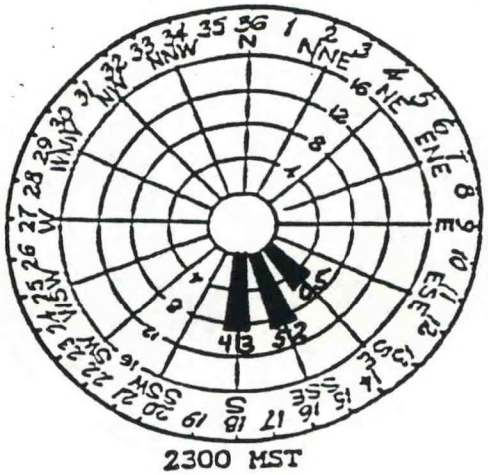
1100 MST

1400 MST

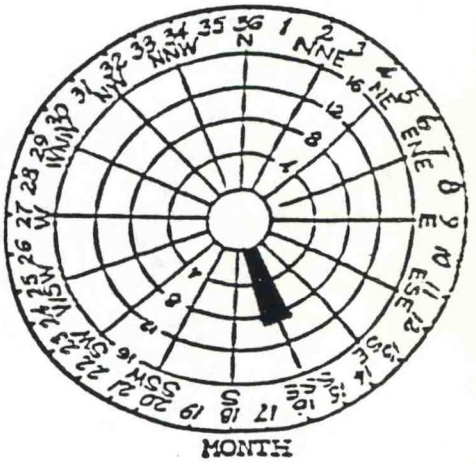


1700 MST

2000 MST



2300 MST

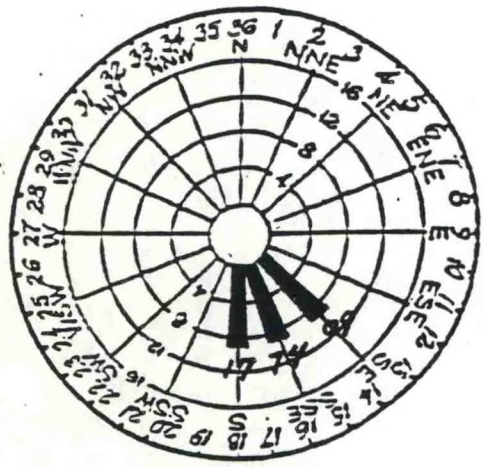


MONTH

Figure 14

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: July

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.

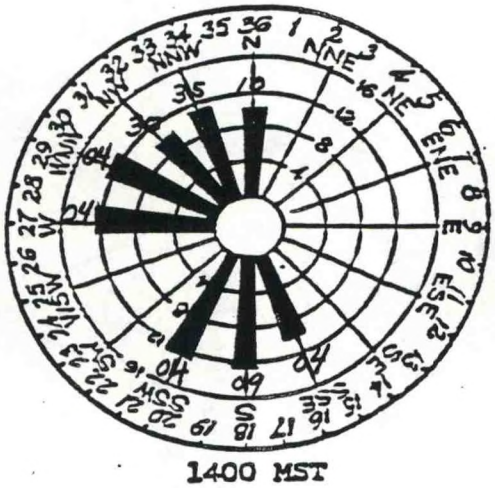


0200 MST

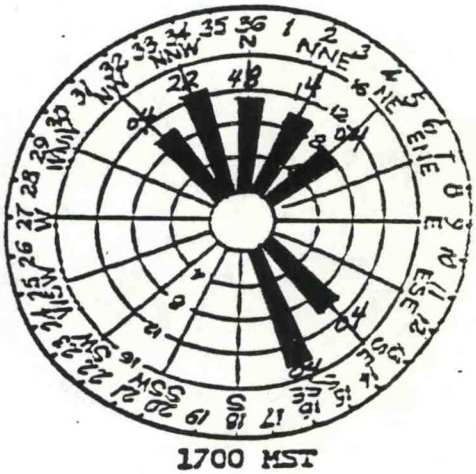
0500 MST

0800 MST

1100 MST

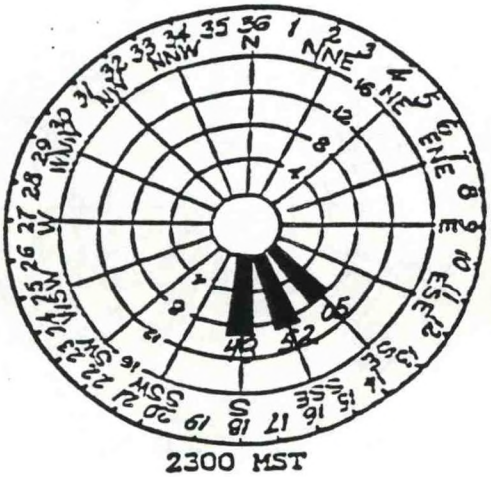


1400 MST

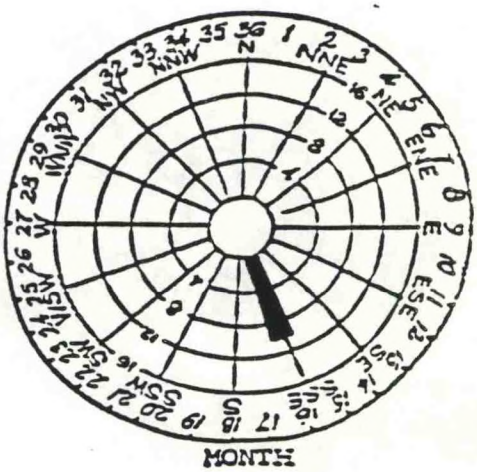


1700 MST

2000 MST



2300 MST

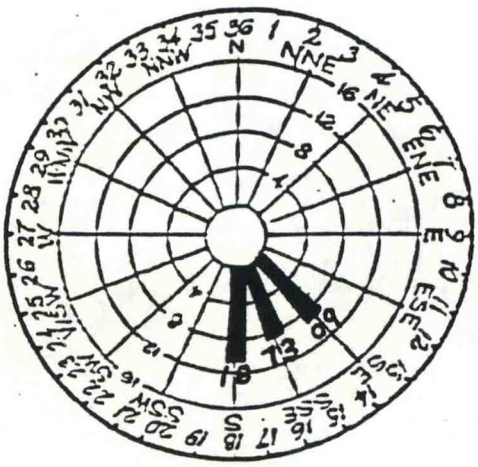


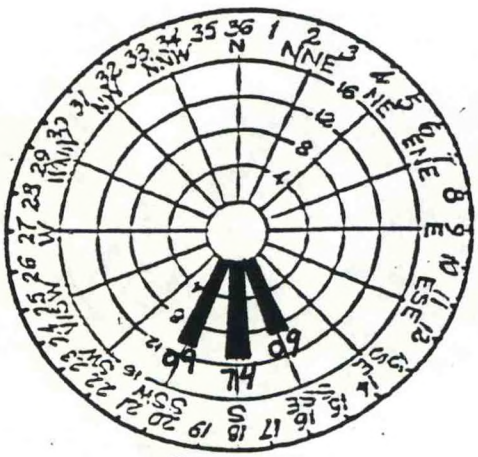
MONTH

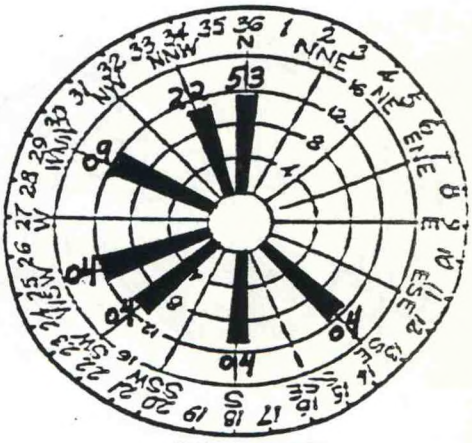
Figure 15

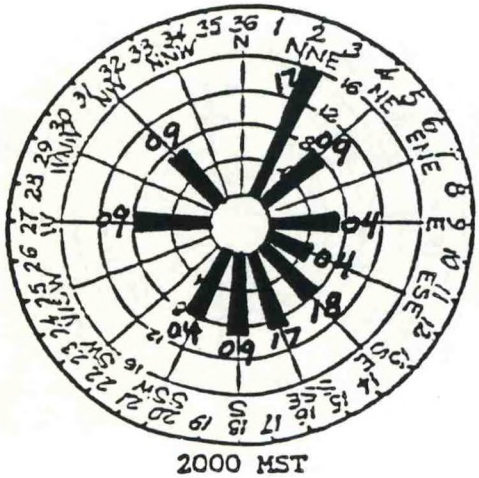
WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 -1986 MONTH: August

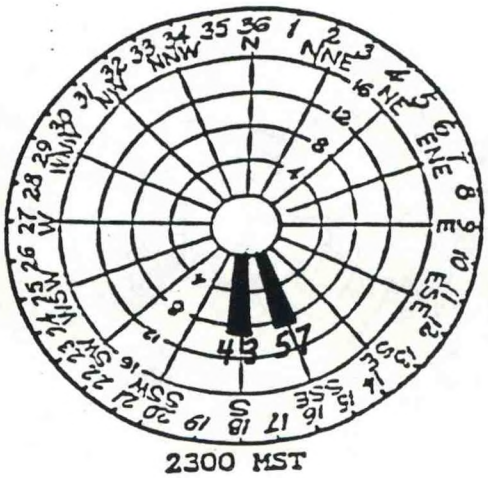
*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.











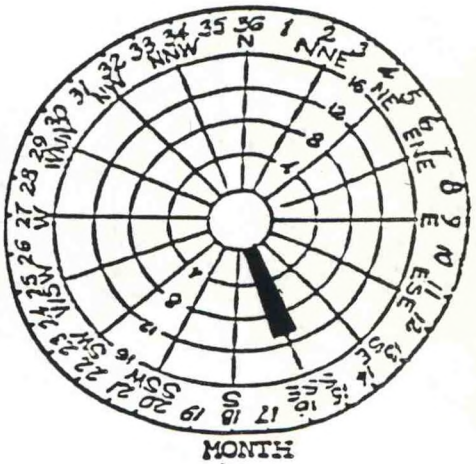
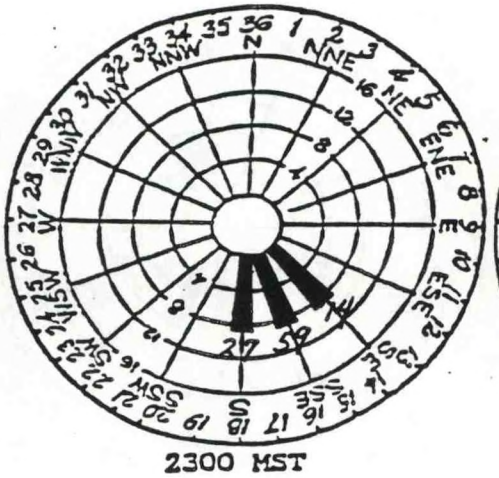


Figure 16

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: September

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.



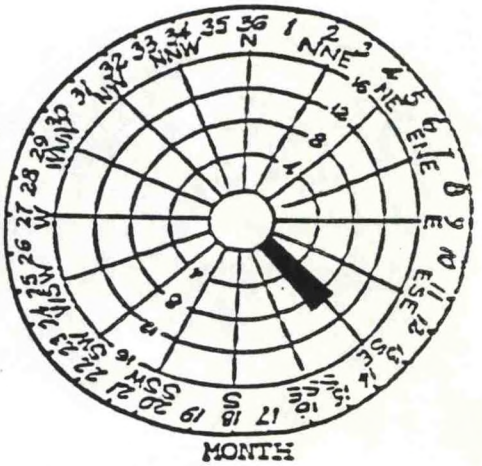
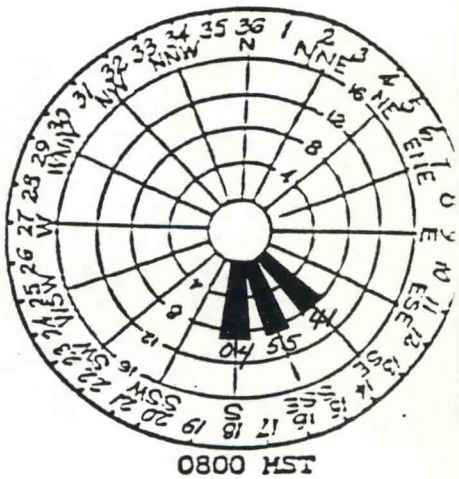
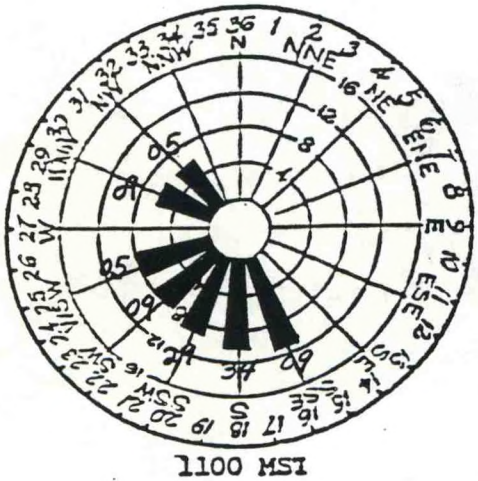


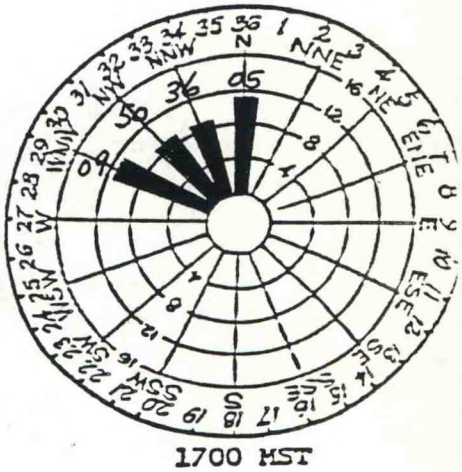
Figure 17

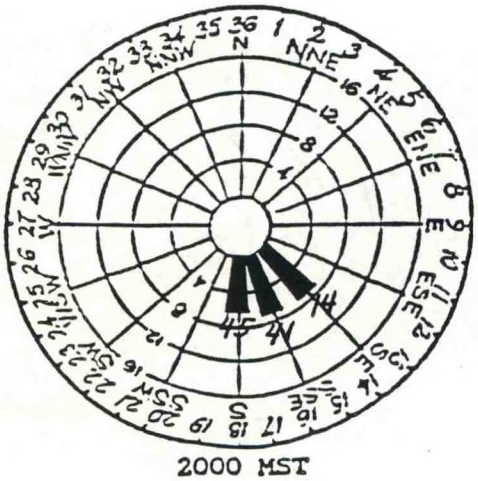
WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: October

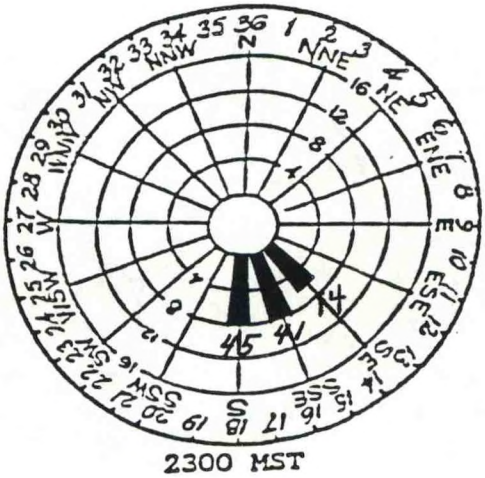
*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.











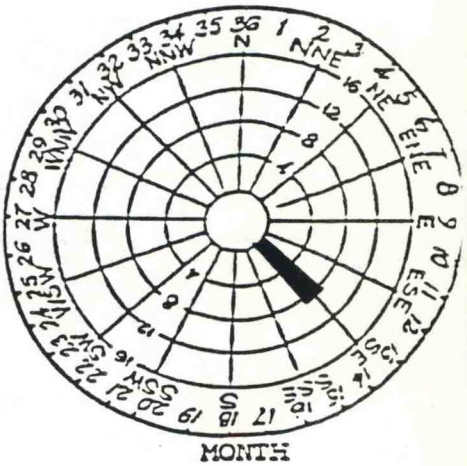
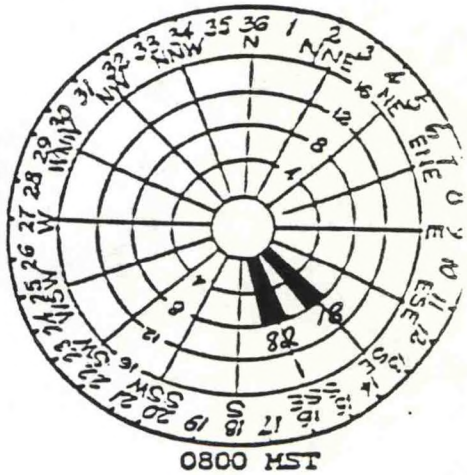
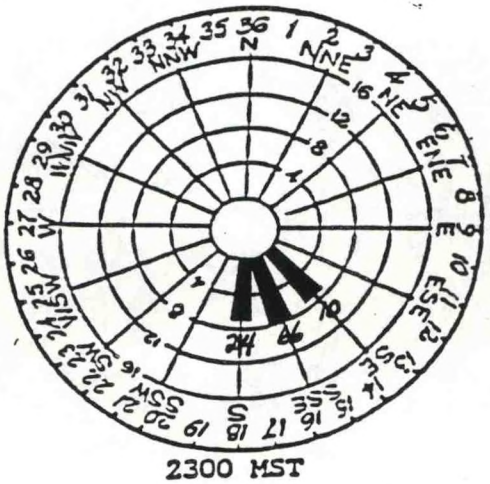


Figure 18

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1986 MONTH: November

*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.





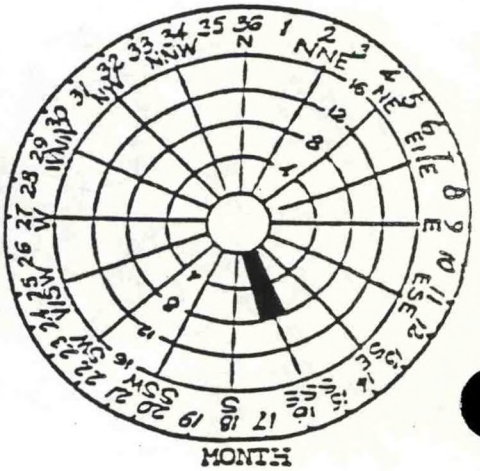
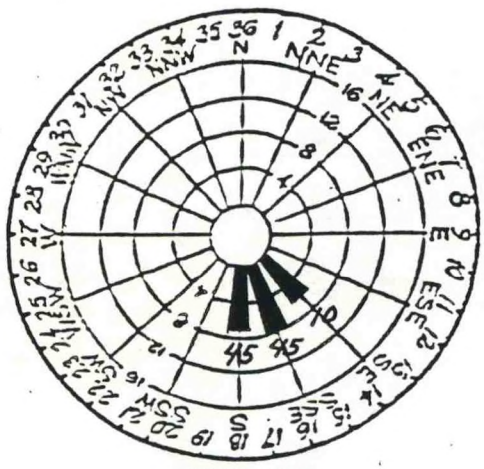


Figure 19

WIND: SURFACE WIND ROSES, EVERY THREE HOURS AND MONTHLY
1961 - 1985 MONTH: December

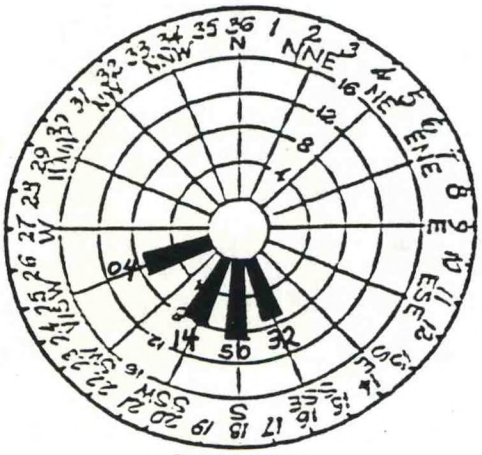
*Wind Roses show direction from which the wind blows and the average speed in MPH. The percentage of time the wind occurred to 16 points of the compass is plotted at the end of each specific shaft.



0200 MST

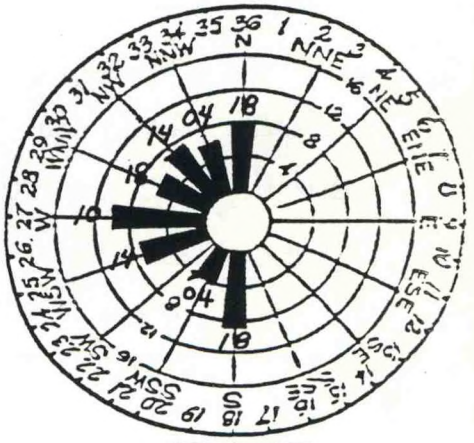
0500 MST

0800 MST

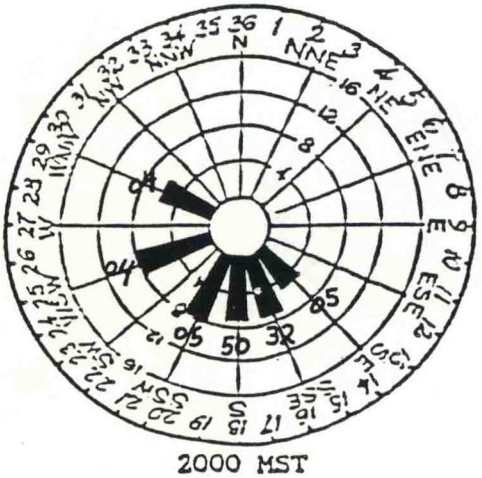


1100 MST

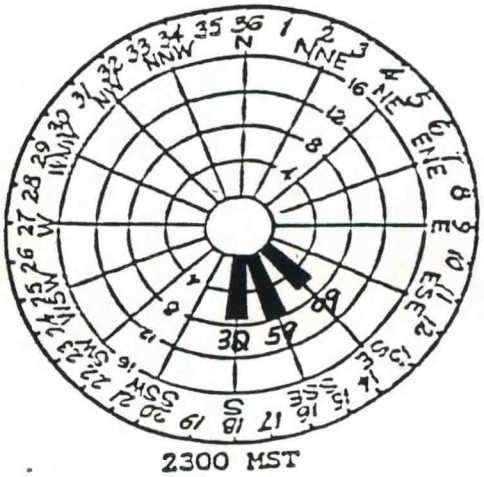
1400 MST



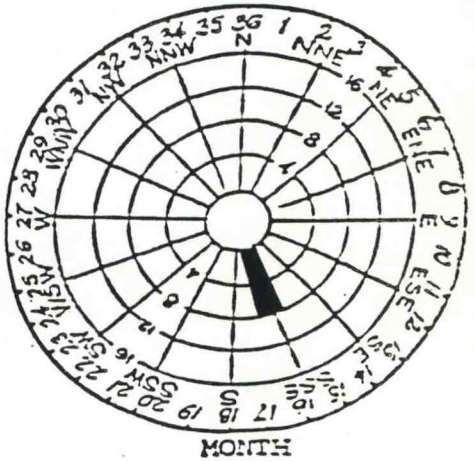
1700 MST



2000 MST



2300 MST



MONTH

TABLE 58

Highest and Lowest Pressure (Reduced to Sea Level) by Month and Day and Year of Occurrence May 1928 - Dec 1986							Average Station Pressure and Highest and Lowest Station Pressure by Month and Day and Year of Occurrence (Airport Elevation 4227 ft) 1929 - 1978[1]						
Month	Highest	Day	Year	Lowest	Day	Year	Average	Highest	Day	Year	Lowest	Day	Year
January	31.01	1	1979	29.04	12	1932	25.81	26.39	28	1962	24.85	12	1932
February	30.83	12	1943	29.08	6	1937	25.78	26.38	12	1943	24.92	6	1937
March	30.78	11	1951	29.11	10	1954	25.69	26.30	11	1951	24.99	10	1954+
April	30.58	6	1939	29.14	22	1960+	25.67	26.19	6	1939	25.03	11	1935
May	30.50	15	1970	29.27	23	1953	25.66	26.14	15	1970	25.16	23	1953
June	30.39	15	1981	29.17	22	1944	25.69	26.04	22	1964	25.11	8	1944
July	30.34	10	1983	29.30	4	1986	25.73	26.07	8	1959	25.30	8	1954
August	30.30	29	1984+	29.39	31	1944	25.74	26.01	20	1961	25.32	29	1932
September	30.52	25	1970	29.33	4	1970	25.76	26.16	25	1970	25.25	2	1936
October	30.67	31	1981	29.23	29	1935	25.79	26.26	19	1964	25.12	29	1935
November	30.89	23	1938	29.02	30	1982	25.80	26.38	23	1938	25.10	15	1952
December	31.09	8,9	1956	29.01	1	1982	25.81	26.43	8,9	1956	24.98	30	1951
ANNUAL	31.09	8,9 Dec	1956	29.01	1 Dec	1982	25.74	26.43	8,9 Dec	1956	24.85	12 Jan	1932

\+ Also occurred in earlier years.

(1) Highest and lowest station pressure tabulations discontinued January 1971. The average station pressure values in this table were continued through 1978.

TABLE 59

NORMAL[1] AND HIGHEST AND LOWEST HEATING DEGREE DAYS BY MONTHS AND YEAR OF OCCURRENCE (BASE 65 DEGREES)
May 1928 - December 1986

Month	Normal	Highest	Year	Lowest	Year
July	0	23	1938	0	1985+
August	0	49	1968	0	1985+
September	97	239	1965	16	1960
October	377	573	1946	225	1950
November	759	995	1930	560	1953
December	1076	1459	1932	835	1977
January	1128	1658	1949	784	1953
February	865	1363	1933	637	1934
March	753	1016	1964	484	1934
April	474	619	1970	268	1934
May	220	415	1933	56	1934
June	53	185	1945	0	1977
ANNUAL	5802	6875	1932	4590	1934

TABLE 60

NORMAL AND HIGHEST AND LOWEST COOLING DEGREE DAYS BY MONTHS AND YEAR OF OCCURRENCE (BASE 65 DEGREES)
May 1928 - December 1986

Month	Normal	Highest	Year	Lowest	Year
January	0	-	-	-	-
February	0	-	-	-	-
March	0	-	-	-	-
April	0	13	1934	0	1983+
May	28	181	1934	0	1953
June	152	310	1961	40	1945
July	388	510	1960	296	1986
August	311	489	1940	185	1928
September	97	208	1979	21	1965
October	5	29	1963	0	1985+
November	0	-	-	-	-
December	0	-	-	-	-
ANNUAL	981	1468	1940	616	1965

(1) Normals based on the record for the 1951-1980 period.
+ Also occurred in earlier years.
NOTE: Heating and cooling degree days are used as an indication of fuel and energy consumption. One heating or cooling degree day is given for each degree that the daily mean temperature departs below or above 65 degrees respectively.

TABLE 61

WARMEST AND COLDEST SUMMER SEASONS (JUNE, JULY, AUGUST) WITH THEIR AVERAGE MEAN TEMPERATURE AND AMOUNT OF PRECIPITATION RECEIVED DURING THE PERIOD 1928 - 1986

WARMEST			AVERAGE SUMMER SEASON MEANS FOR PERIOD OF RECORD		COLDEST		
Year	Mean Temp	Pcpn	Temp	Pcpn	Year	Mean Temp	Pcpn
1961	77.5	1.83			1928	69.5	1.31
1985	76.6	2.18			1945	69.9	7.93
1940	76.1	0.59			1965	70.7	5.45
1974	75.6	0.78	71.9	2.49	1964	70.9	3.04
1960	75.5	0.74			1944	70.9	2.82
1981	75.3	1.59			1932	70.9	4.58
1986+	75.2	3.14			1951	71.0	4.05

+ Also occurred in earlier years

TABLE 62

WARMEST AND COLDEST WINTER SEASONS (DECEMBER, JANUARY, FEBRUARY) WITH THEIR AVERAGE MEAN TEMPERATURE AND TOTAL SNOWFALL AND DAYS WITH SNOW DURING THE PERIOD 1928-1929 TO 1985-1986

WARMEST					AVERAGE WINTER SEASON MEANS FOR PERIOD OF RECORD				COLDEST				
Year	Mean Temp	Total Snow (In)	Nmbr Days With Snow	Total Pcpn	Temp	Snow (In)	Nmbr Days With Snow	Pcpn	Year	Mean Temp	Total Snow (In)	Nmbr Days With Snow	Total Pcpn
1977-78	38.0	39.3	28	5.21					1932-33	19.5	66.2	36	3.77
1933-34	37.9	13.6	9	3.77					1948-49	19.9	74.7	36	5.58
1937-38	36.3	15.9	15	2.71					1930-31	23.5	15.0	15	1.51
1952-53	36.2	25.2	8	4.28	30.4	38.0	21	3.82	1928-29	23.9	24.2	25	2.13
1969-70	35.8	22.7	20	3.87					1931-32	23.9	41.9	31	3.09
1958-59	35.4	29.9	15	3.55					1963-64	24.0	39.1	30	2.06
1957-58	35.3	28.2	23	4.68					1972-73	24.9	59.7	22	5.62

TABLE 63
HOLIDAY WEATHER INFORMATION
1929 - 1986

	Avg Max Temp	Avg Min Temp	High Max Temp	Date	Low Max Temp	Date	High Min Temp	Date	Low Min Temp	Date	Chc of .01 inch or more pcpn	Pct of Days With 0.1 in. or more snow	Max 24 hr Snow	Date
NEW YEARS DAY January 1	36	19	58.1	1943	14.2	1979	42.0	1934	-4.0	1931	26	21	4.6	1937
PRESIDENTS DAY Feb 19-Feb 25	46	26	64.8	1958	29.1	1955	42.9	1982	5.9	1975	31#	18*	2.7	1942
EASTER SEASON Mar 15-Apr 15	56	33	83.7	4/7 1930	27.2	3/27 1975	58.4	4/8 1930	10.0	3/19 1965	33#	14*	11.8	4/10 1974
MEMORIAL DAY Last Monday in May	76	47	92.7	5/31 1956+	52.0	5/30 1937	66.6	5/27 1974	32.4	5/28 1954	29			
INDEPENDENCE DAY July 4	91	60	101.8	1936	73.2	1938	67.2	1936	46.7	1938	9			
PIONEER DAY July 24	94	63	105.4	1931	76.6	1977	77.2	1953	50.2	1954	14			
LABOR DAY First Monday in September	85	54	98.0	9/4 1950	57.3	9/1 1973	71.3	9/4 1978	38.6	9/3 1961	17#			
UTAH STATE FAIR Sep 1 -Sep 15	77	47	100.0	9/8 1979	54.9	9/5 1970	73.1	9/5 1978	32.2	9/13 1928	17#			
HALLOWEEN October 31	59	34	71.8	1952	35.1	1971	48.0	1954	17.5	1935	28	5	8.5	1971
THANKSGIVING DAY Nov 22-Nov 28	45	26	68.6	11/25 1960	22.5	11/24 1931	46.9	11/24 1960	0.0	11/24 1931	23#	14*	7.0	11/26 1973
CHRISTMAS DAY December 25	37	20	59.2	1955	19.8	1948	46.0	1955	-6.7	1930	33	30	5.9	1943

 # These percentages relate to the probability of precipitation on any one day of the given period.

*** These percentages relate to snowfall on any one day of the given period.**

+ Also occurred on 27 May 1951.

NOAA Technical Memoranda NWS WR: (Continued)

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